Ten years of rapid fertility changes in the European post-communist countries. Evidence and interpretation.

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Evidence and interpretation

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Population Research Centre
Working Paper Series 02-1, July 2002

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I would like to express my gratitude to many colleagues who helped me to collect fertility and population data for various countries of Central and Eastern Europe. I am especially thankful to Vlada Stankuniene from the Lithuanian Institute of Philosophy in Vilnius, Boris Burcin from the Department of Demography and Geodemography at Charles University in Prague, Hans-Peter Kohler from the Max Planck Institute for Demographic Research in Rostock, Sergei Scherbov from the Population Research Centre at the University of Groningen, Elena Koytcheva from the National Statistical Institute in Sofia, Taeke Gjaltema from the Statistics Netherlands in Voorburg and to Aura-Mihaela Zamfirescu from the National Commission for Statistics in Bucharest. Furthermore, I appreciate useful comments and suggestions from Frans Willekens, Leo van Wissen and Sabu S. Padmadas.

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EDITORIAL

The aim of the Population Research Centre (PRC) Working Paper Series is to stimulate good quality scientific research in demography and to serve as an outlet for research in the intermediate stage between a manuscript form and the publication in a referred journal. The staff and the students at the doctoral and post-doctorate levels are encouraged to submit their research to the Working Paper Series. Besides, any other collaborative research, joint work or scientific contributions of visiting research fellows of the PRC would be considered for publication in the series.

The publication will be determined purely on the basis of the quality of the manuscript. The manuscript must be sufficiently detailed to include an important research question and objectives, a theoretical focus, an adequate review of literature, a clear description of suitable data and methods used, and meaningful analyses with simple interpretations.

It is with profound pleasure to introduce the research by Tomáš Sobotka on fertility transitions in the post-communist countries of Europe. Fertility in most of the European nations is either below or very close to replacement levels. Much of the recent changes in fertility are attributed to individual choices and opportunities. Rapid changes in social, economical, political or cultural systems function as catalysts in determining individual fertility choices and behaviour. A dramatic fall in fertility levels in the formerly communist societies, particularly observed during the 1990s, initiated tremendous discussion on the patterns of decline with a focus on the age, period and cohort effects. A comprehensible derivation of how these changes (processes) occurred and how individual fertility behaviour is embedded in a dynamic and evolving context seem to be largely unexplored. Earmarking the year 1989 as a reference point– the fall of communist political systems, Tomáš investigated the fertility changes in the post-communist European countries distinguishing two distinct patterns; an intensive and a slow postponement behaviour of partnership formation, marriage, childbearing and related demographic events. Although a little extensive, I found this research very promising and well synchronised with a fine blend of facts and figures. I recommend this publication as a potential source for researchers interested in the Central and Eastern European demography.

I am sure you will enjoy reading it.
Sabu S. Padmadas, Editor

ABSTRACT

This paper provides a detailed evidence on recent fertility changes in the countries of Central and Eastern Europe and offers an interpretation of these changes. It focuses on the ten-year period of 1989-1999, which witnessed the most intensive changes in childbearing patterns, such as rapid decline in period fertility rates, postponement of childbearing and an upsurge in the proportion of non-marital births. Changes in fertility are analyzed with the use of data collected by national statistical offices, further complemented by evidence from the FFS surveys (Fertility and Family Survey) and RHS surveys (Reproductive Health Survey). The paper discusses the notion of a *socialist greenhouse* - an artificial environment that shaped people's lives during the communist era. Changes in fertility and family formation over the 1990s are perceived as results of the collapse of the *socialist greenhouse*, which was mutually facilitated by two basic dimensions: broader social changes and new economic constraints. Particular attention is paid to the rapidly evolving differentiation of fertility patterns across Eastern Europe and the role of the cultural-religious tradition in this differentiation.

Keywords Fertility ? Central and Eastern Europe ? Low fertility ? Postponement of childbearing ? Reproductive behavior ? Fertility decline

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1. INTRODUCTION

"*The notion that the recent fertility decline reflects more than a reaction to the economic crisis, increased opportunity costs for women, or large cohorts following small ones gains further support from the observation that other changes in the family followed in the wake of this fertility decline and they too have the appearance of a fundamental transition"* (Ron Lesthaeghe on Western Europe (1983, p. 416))

The avalanche of events that led to the demise of authoritarian communist regimes swept through countries of Central and South-Eastern Europe in the 'revolutionary year' 1989 and reached its climax with the dissolution of the Soviet Union in 1991. The political division of Europe into the East and West, clearly distinguishing the members of the two competing political blocs and two different social and economic systems for more than four decades, has come to an end, paving way to the less clear-cut political, social and economic differentiation of Europe. Most post-communist societies struggled to implement democratic institutions and market economy. The legacy of the totalitarian past – backward and inefficient economy almost completely managed by the state, egalitarian social structure with marginalized middle strata and lack of democratic tradition in most countries – presented more difficult obstacles to the reforms than was initially expected. Thus the profound social changes brought both new opportunities and constraints and resulted in increasing differences between countries of Central and Eastern Europe[1].

Radical social and economic transformation generated a strong impetus for the subsequent change in demographic behavior of populations in this region. Fertility patterns, initially characterized by early and almost universal childbearing and by a strong attachment to the two-child family norm, have

[1] For simplicity, the term *Eastern Europe* is used for the whole group of European post-communist countries included in the analysis. This follows a concept of Eastern Europe that evolved from the peculiar development of the region after the end of the Second World War. However, this does not correspond with the historical cultural division between Eastern European and Western European civilization, following roughly the division between Orthodox Christianity and Catholic or Protestant Christianity (see Dingsdale, 1999).

changed rapidly over the 1990s. Substantial decline in period fertility has taken place in all post-communist countries of Europe, which now form the lowest-fertility region in the world with the total fertility rates (TFR) ranging between 1.1 and 1.4 in 1999. Strong reduction of fertility during the 1990s, accompanied by a rapid increase in non-marital childbearing and by the postponement of first births, seemingly indicates a uniform adjustment of population to the ongoing process of economic and social changes.

The dynamic changes of Eastern European demographic landscape and fertility in particular has received attention of many researchers referring either to individual countries[2] or to Eastern Europe in general[3]. Lesthaeghe (2000), Lesthaeghe and Moors (2000) and Macura et al. (2000) discussed fertility changes in the former communist countries in a broader European context. An interesting discussion has evolved around several issues: Why has fertility decline and fertility change in general proceeded so fast? What are the major causes of fertility changes; are economic difficulties and decline in living standards more important than new opportunities and increased freedom? Is Eastern Europe experiencing the same transformation as the Western European societies since the mid-1960s? What is the impact of the postponement of births on period fertility in this region? Are the fertility patterns in Eastern Europe becoming more heterogeneous? Is the East-West demographic division of Europe, once identified by Hajnal (1965) in the case of nuptiality, disappearing or just being modified?

This paper aims to provide a detailed evidence on fertility changes in the countries of Central and Eastern Europe over the 1990s and to offer an interpretation of these changes. In doing so, it touches most of the questions posed above. The overview in the third section of the paper looks at the fertility changes in a longer time perspective. Developments in fertility are presented along with the evidence on changes in family formation and with the data on contraceptive use and induced abortion. In the fourth part, the notion of a "socialist greenhouse" – an artificial environment that was permeating people's employment opportunities, educational choices and life transitions – is introduced as a basic

[2] e.g. Conrad et. al (1996), Rabušic (1997), Fratzak (1998), Sackmann (1999), Barkalov (1999), Rychtaríková (2000), Zakharov (2000), Konietzka and Kreyenfeld (2001) and contributions in Kucera et al. (2000).
[3] UN ECE (1999), UN ECE (2000(1)), Philipov and Kohler (2001), Philipov (2002).

interpretative scheme of the functioning of the previous regime of demographic reproduction. This environment, characterized by limited opportunities, uniformity and a high degree of familism, effectively prevented many changes in fertility to progress earlier, as was the case of Western and Northern Europe since the mid-1960s. The interpretation pertaining to the dissolution of the *socialist greenhouse* in the 1990s focuses on two dimensions that mutually facilitated fertility changes: broad social changes and new economic constraints. The most important aspects of social and economic changes are discussed in more detail and they are linked to various theories and views on fertility change. Particular attention is paid to the rapidly evolving differentiation of fertility patterns across Eastern Europe, which are to some degree associated with the cultural-religious tradition.

2. DATA AND METHODS

The data were collected from various sources. Basic data on fertility, abortion and other demographic indicators originate from the Council of Europe (2000, 2001) and from EUROSTAT (2001, 2002). Detailed data on births by birth order (biological birth order) and age of mother and data on the age structure of women were obtained from EUROSTAT (2001, 2002), from national demographic yearbooks (CNPS, 1990-1997; CSU, 2000a, 200b; FSU, 1981-1989 (1) and (2); HCSO, 1981-2000; GUS, 1991-2000; SORS, 2000), directly from the Statistical Offices (CNPS, 1998; CSU, 2000b; DASS, 1999) and from the research papers (Boleslawski, 1993; Philipov and Kohler, 2001; Steshenko, 2000). Data for Russia as well as the data for Slovakia and Lithuania before 1994 were obtained by courtesy of several colleagues. Indicators related to cohabitation, contraceptive use and mother's status at first birth were compiled from the published tables of the FFS (Fertility and Family Survey, 1991-1998) Standard Country Reports and RHS (Reproductive Health Survey, 1993-1999) conducted in many countries of the region throughout the 1990s. Most of the social and economic indicators come from the following sources: EUROSTAT (2001, 2002), FV (2000), Halman (2001), UN HDR (2000), UN ECE (2000 (2), 2001), and Zohoori et al. (1999).

In total, 16 regions – 15 countries and the region of the former GDR – have been selected for the comparative analysis. To allow a concise comparison of a large amount of data, some figures are presented as arithmetic means[4] for 4 distinctive regions: Central Europe including East Germany, South-Eastern Europe, Baltic Republics and the Post-Soviet Republics, grouping remaining European states of the former Soviet Union (Table 1). For Croatia and East Germany as well as for the Post-Soviet Republics, only a limited amount of data is available and therefore they are not included in many figures[5]. Apart from Croatia and Slovenia, other

[4] Arithmetic means were chosen rather than weighted means (weighted by the population of given countries) due to the large differences in population size between various Central and Eastern European countries. Weighted means would mostly mirror the situation in a few large countries of this region, e.g. Russia among the Post-soviet Republics (146 million out of 209 million inhabitants in 2000) or Poland among the *Catholic belt* countries (38.7 million out of 52.3 million inhabitants in 2000).

[5] Moreover, Croatia presents an additional problem. Demographic development in the country was influenced by the civil war that followed the dissolution of Yugoslavia in 1991. The inclusion of

successor states of the former Yugoslavia as well as Albania were excluded for the lack of data, specific demographic developments influenced by recent civil wars (Bosnia-Herzegovina, Federal Republic of Yugoslavia) and distinctive history or cultural tradition[6].

In addition to the geographical division, selected data are organized according to a broadly defined cultural tradition. Some demographic indicators, such as the prevalence of non-marital childbearing, are differentiated more by the influence of religious and cultural tradition than by the geographical position of the country. Basically, countries are divided into the three groups. The group of traditionally Roman Catholic countries is further divided into two subgroups, one of the countries with a relatively high religiosity ("Catholic belt": Croatia, Lithuania, Poland and Slovakia) and another, marked by a strong secularization (Czech Republic, Hungary and Slovenia)[7]. Countries characterized by the historical influence of Protestantism (which was, however, always mixed with a strong presence of Roman Catholicism), namely Estonia, Latvia and East Germany, form the second group. These are highly secularized societies, with East Germany being an extreme case[8]. Nations of South-Eastern Europe and the Post-Soviet Republics form a group of countries with Christian Orthodox tradition.

The presentation of recent fertility transformations in Section 3 is complemented by an estimation of the effects of fertility postponement on the period fertility proposed by Bongaarts and Feeney (1998 and 2000). This method enables to estimate the "tempo" and the "quantum" components of period fertility, the latter being the level of the period TFR that would be reached in the absence of changes in fertility timing.

Croatia in the Central European region is based on cultural tradition (part of the Austro-Hungarian Empire, dominance of the Roman Catholic religion) and on the country's demographic characteristic.

[6] For an overview of demographic changes in the Balkan countries in the 1990s, see Sardon (2001).

[7] The distinction was based on the data on religiosity from two sources: European Values Study data from 1999 published in Halman (2001) and Census data presented in Fischer Weltalmanach (FV, 2000).

[8] According to the results from the ISSP (International Social Survey Program) 1998, 69 % of people in the former GDR declared themselves to be non-religious (Hamplová, 2000).

Table 1: Geographic and cultural-religious division of Central and Eastern Europe and European macro-regions presented in the figures

Division of countries of Central and Eastern Europe	
a. Economic and geographic proximity	**b. Cultural-religious tradition**
1. Central Europe	**1. Dominantly Roman Catholic**
Croatia	**1a."Catholic religious", "Catholic belt"**
Czech Republic	Croatia
Former GDR	Lithuania
Hungary	Poland
Poland	Slovak Republic
Slovak Republic	**1b "Catholic secularized"**
Slovenia	Czech Republic
2. South-Eastern Europe	Hungary
Bulgaria	Slovenia
Romania	**2. Dominantly Protestant**
3. Baltic states	Estonia
Estonia	Former GDR
Latvia	Latvia
Lithuania	**3. Dominantly Christian Orthodox**
4. Post-Soviet republics	Belarus
Belarus	Bulgaria
Moldova	Moldova
Russian Federation	Romania
Ukraine	Russian Federation
	Ukraine

Division of European macro-regions	
Eastern Europe	16 regions specified in the table above
Northern Europe	Denmark, Finland, Norway and Sweden
Western Europe	Austria, Belgium, France, Western Germany, the Netherlands, Switzerland and the United Kingdom
Southern Europe	Greece, Italy, Portugal and Spain

Unless given otherwise, indicators shown in the figures represent arithmetic averages for countries specified in the table

3. EMPIRICAL EVIDENCE ON RECENT CHANGES IN FERTILITY AND LIVING ARRANGEMENTS

Demographic distinctiveness of Eastern Europe as a relatively homogeneous region had gradually developed between the mid-1960s and mid-1980s. In 1985, there was a clear demographic division between Eastern and Western Europe (Monnier and Rychtaríková, 1992, p. 157). A cleavage along political boundaries has replaced the geocultural line identified by Hajnal in 1965 (Ní Bhrolcháin, 1993, p. 463). Political blocs constituted specific level of spatial organization, manifested also by contrasting fertility development (Decroly, 1993). The Eastern European patterns of fertility behavior in the mid-1980s were characterized by a strong attachment to the two-child family, with only a few women remaining childless or having large families, by an early entry into the family, early start of childbearing (compared to the Western European standard) and by a subsequent short spacing of births. Reproductive life was marked by a low prevalence of modern contraception and high incidence of induced abortion. Pre-marital conceptions were common[9], while non-marital births were relatively rare (except for several countries).

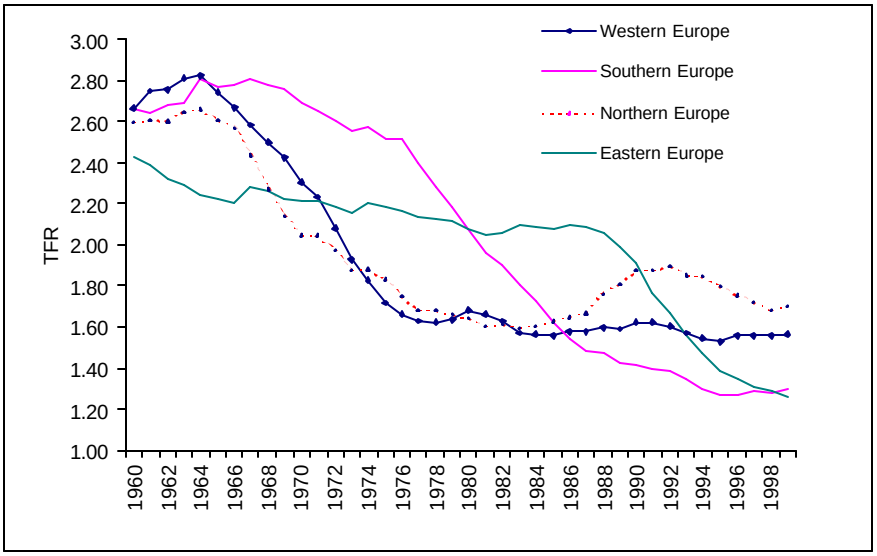
The 1990s brought a complex transformation of this reproductive model. Table 2 summarizes the basic characteristics of fertility change in the period 1989-1999 in 16 post-communist countries. The following section deals with recent fertility changes in more detail. Particular attention is paid to the postponement of childbearing, increasing differences in period fertility by birth order, rapid spread of non-marital births and the diffusion of cohabitation as well as to the changes in abortion rates and contraceptive use.

[9] In the Czech Republic, about half of the first marital births were conceived before marriage during the 1980s (FSU, 1981-89 (1)). In Poland, 49 % of first children were born within 9 months following the marriage in 1990 (GUS, 1991).

3.1. Long-term changes in period fertility

Since the 1960s, the total fertility rates in Central and Eastern Europe contrasted with fertility in other parts of Europe (Figure 1). In Hungary, Estonia and Latvia, the TFR fell below 2.0 already at the beginning of the 1960s, while many parts of Europe experienced a moderate baby-boom. In the 1970s and 1980s, various measures of population policy[10] together with other factors (see discussion on the *socialist greenhouse*) prevented fertility in Eastern Europe from a decline experienced in all other European regions. Finally, in the 1990s, a sharp fall in the TFR shifted the position of Eastern Europe on the European fertility map from the

Figure 1: Total fertility rate in European regions, 1960-1999



For definition of the regions, see Table 1

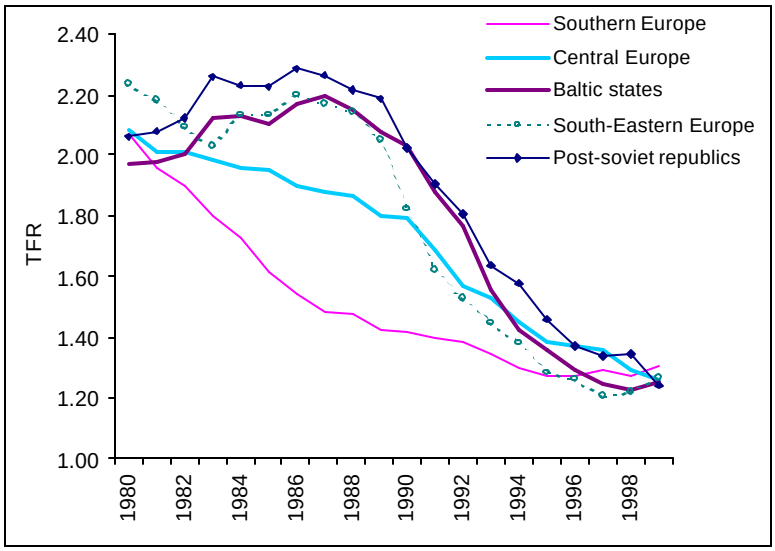
[10] A large variety of pronatalist and social policy measures included child benefits (often progressively increasing with the number of children in the family), paid maternity leave and the provision of daycare for children (see Klinger, 1991). Moreover, restrictions of access to abortions were imposed in several countries at the end of the 1960s and in the 1970s (Blayo, 1991). In Romania and in the Soviet Union, employed unmarried men and employed childless women had to pay a special "childlessness" tax.

"highest fertility" to the "lowest fertility" region within one decade.

The level of fertility in Eastern European regions in 1980 and in 1998 was close to Southern Europe, where the post-war fertility decline started later and was more pronounced than in Northern and Western Europe (Figure 2). Nevertheless, apart from Central Europe, an intensive decline in the TFR in the post-communist countries was concentrated entirely into the short period of the 1990s. In several countries of Central Europe, especially in Slovenia and in the former GDR, the decline in period fertility had started already in the 1980s.

A steep decline in the period fertility over the 1990s indicates a seemingly uniform reaction to an uneasy and complex transformation of the post-communist societies. However, a more detailed look at the changes in the timing and composition of fertility depicts a growing diversity in fertility patterns across Eastern Europe.

Figure 2: Total fertility rate in Eastern European regions and in Southern Europe 1980-1999



For definition of the regions, see Table 1

Table 2: Overview of basic indicators of period fertility in the post-communist countries of Europe, 1989-1999 (part 1)

	Population 2000	TFR 1989	TFR 1999	Change TFR 89-99	Adjusted TFR avg.1997-99	TFR 1 1998	TFR 2 1998	TFR 3+ 1998
Central-Eastern Europe								
Croatia (CRO)	4 568	1.67	1.38	-0.29	..	..	..	..
Czech Republic (CR)	10 278	1.87	1.13	-0.74	1.67	0.527	0.446	0.183
Hungary (HUN)	10 043	1.82	1.28	-0.53	1.71 (97-98)	0.574	0.441	0.312
Poland (POL)	38 654	2.08	1.37	-0.71	1.74	0.620	0.452	0.363
Slovak Republic (SR)	5 399	2.08	1.33	-0.75	1.77	0.576	0.460	0.338
Slovenia (SLO)	1 988	1.52	1.21	-0.31	1.67	0.602	0.461	0.170
Former GDR (GDR)	15 217	1.57	1.11	-0.46	..	..	..	..
South-Eastern Europe								
Bulgaria (BG)	8 190	1.90	1.23	-0.67	1.38	0.646	0.349	0.116
Romania (ROM)	22 456	2.21	1.30	-0.91	1.51	0.684	0.382	0.254
Baltic states								
Estonia (EST)	1 439	2.21	1.24	-0.97	1.61	0.604	0.381	0.222
Latvia (LAT)	2 424	2.05	1.16	-0.89	1.56	0.562	0.340	0.195
Lithuania (LIT)	3 699	1.98	1.35	-0.63	1.63	0.647	0.485	0.231
Post-soviet republics								
Belarus (BEL)	10 020	2.03	1.29	-0.74	..	..	..	..
Moldova (MOL)	4 282	2.78	1.39	-1.39	..	0.771 (96)	0.537 (96)	0.305 (96)
Russia (RUS)	145 559	2.01	1.17	-0.84	1.47 (95)	0.721 1)	0.372 1)	0.143 1)
Ukraine (UKR)	49 851	1.94	1.10	-0.84	..	0.840 (94)	0.446 (94)	0.167 (94)

Table 2: Overview of basic indicators of period fertility in the post-communist countries of Europe, 1989-1999 (part 2)

	TFR <20 1999	TFR 30+ 1999	MAB 1999	MAB 1 1999	Change in MAB1 89-99	% nonmarital 1989	% nonmar. 1999	Change in % nonmar. 89-99
Central Europe								
Croatia (CRO)	0.081	0.426	27.56	25.4	1.5	6.6	8.2	1.6
Czech Republic (CR)	0.073	0.273	26.86	24.59	2.11	7.9	20.6	12.7
Hungary (HUN)	0.117	0.358	27.07	24.84	1.74	12.4	28.0	15.6
Poland (POL)	0.089	0.389	27.28	24.33	0.98	5.8	11.7	5.9
Slovak Republic (SR)	0.126	0.305	26.39	23.82	1.17	7.2	16.9	9.7
Slovenia (SLO)	0.038	0.382	27.98	26.13	2.60	23.2	35.4	12.2
Former GDR (GDR)	0.064	0.329	27.47	..	..	33.6	49.9	16.3
South-Eastern Europe								
Bulgaria (BG)	0.243	0.193	24.67	22.98	0.89	11.5	35.1	23.6
Romania (ROM)	0.193	0.254	25.54	23.52	0.94	..	24.1	..
Baltic states								
Estonia (EST)	0.130	0.320	26.56	23.80	0.80	25.2	54.0	28.8
Latvia (LAT)	0.099	0.299	26.78	24.18	1.28	15.9	39.1	23.2
Lithuania (LIT)	0.130	0.335	26.50	23.77	0.40	6.7	19.8	13.1
Post-Soviet republics								
Belarus (BEL)	0.152	0.230	25.39	22.62 (98)	0.38	7.9	17.8	9.8
Moldova (MOL)	0.266 (97)	0.307 (97)	25.4	22.19 (96)	..	10.4	16.6	6.2
Russia (RUS)	0.152	0.234	25.90	23.16 (98)	0.39	13.5	27.9	14.4
Ukraine (UKR)	0.206 (98)	0.186 (98)	24.7 (98)	..	..	10.8	17.4	6.6

Explanations:

Population	Population on January 1, in thousands
TFRi	Parity-specific period TFR (parity i, biological parity)
Adjusted TFR	Bongaarts-Feeney (1998) tempo-adjusted period total fertility rate
TFR <20	Cumulative fertility rates of women below age 20
TFR 30+	Cumulative fertility rates of women aged 30 years and more
MAB	Mean age of mother at childbearing (computed from the age-specific period fertility rates)
MAB1	Mean age of mother at birth of first child

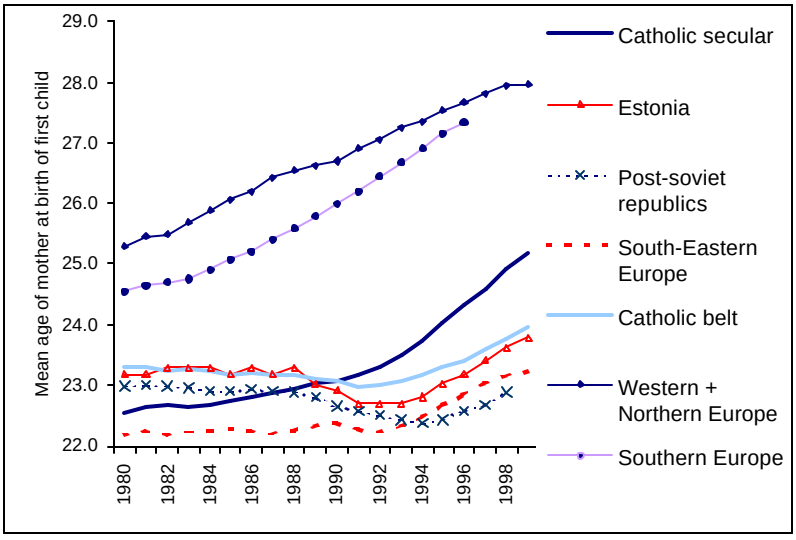
Data sources: Council of Europe (2001), EUROSTAT (2001, 2002), DASS (1999), Steshenko (2000) and unpublished data

3.2. Changes in the timing of fertility marked by the postponement of childbearing

Early age at childbearing was one of the most distinctive features of Eastern European reproductive pattern. While the postponement of first births has gradually spread in all Eastern European regions through the 1990s, the large distance from other European regions in the timing of first births remained virtually unchanged (Figure 3). However, there were substantial differences in the speed of the postponement across Eastern Europe. Since the delay of childbearing has a depressive effect on the period TFR, regional differences in the postponement may yield different interpretation of the very low fertility in various Eastern European regions.

The " aging of fertility" has been manifested earlier in Central Europe, especially

Figure 3: Mean age of mother at birth of first child in European regions



Post-Soviet Republics Data for Belarus and Russia only
Western + Northern Europe Data for the Netherlands, Denmark, Finland and Sweden
Catholic belt Data for Lithuania, Poland and Slovak Republic
For definition of other regions, see Table 1

in the more secularized countries (Czech Republic, Hungary, Slovenia), where the mean age of first mothers grew by 1.7 (Hungary) to 2.6 (Slovenia) years between 1989 and 1999. The postponement was probably even more intensive in the former GDR, for which the indicator is not available [11]. The Post-Soviet Republics and the Baltic states initially experienced a decline in the mean age of first mothers since the end of the 1980s, but this trend reversed around 1994.

Available data indicate that in the second half of the 1990s, first births were postponed to some extent in all post-communist countries. In Central Europe, Baltic states and South-Eastern Europe the postponement has already progressed by a faster pace than in Western and Northern Europe, where it has been slowing down.

Postponement of first births proceeded hand in hand with the decline in the first-parity fertility rates (TFR_1). Although it started in Eastern European countries at much lower ages than in other regions in Europe, the TFR_1 and the mean age of mother at birth of first child (MAB_1) are likely to follow a similar transition characterized by four distinctive stages (Figure 4):

1. **Initial stage:** High TFR_1 and relatively low MAB_1 ;
2. **Onset of the postponement** manifested by a decline in the TFR_1 and increase in the MAB_1;
3. **Continuing postponement**: TFR_1 stabilizes at a low level, while the mean age of first mothers continues to grow;
4. **Postponement stops:** As the mean age of first mothers approaches the age of 30, the postponement gradually slows down or stops and as a result the TFR_1 increases again, although not to the initial level.

In Figure 4, the ongoing transition in several post-communist countries is compared with the Netherlands, which has already reached the final stage and with Italy, where the postponement of first births is still going on (Stage III.). In most countries of Eastern Europe, the postponement is progressing relatively fast and the depressing effect on the first-order fertility rates is more pronounced. The

[11] In Germany, births are registered according to the birth order within marriage. Since the majority of first births in East Germany take place outside marriage, statistics on first births within marriage is not comparable with the data for other countries, referring to biological ('true parity') births.

Figure 4: First-parity TFR (TFR_1) and the mean age of mother at birth of first child. A comparison of selected countries, 1970-2000

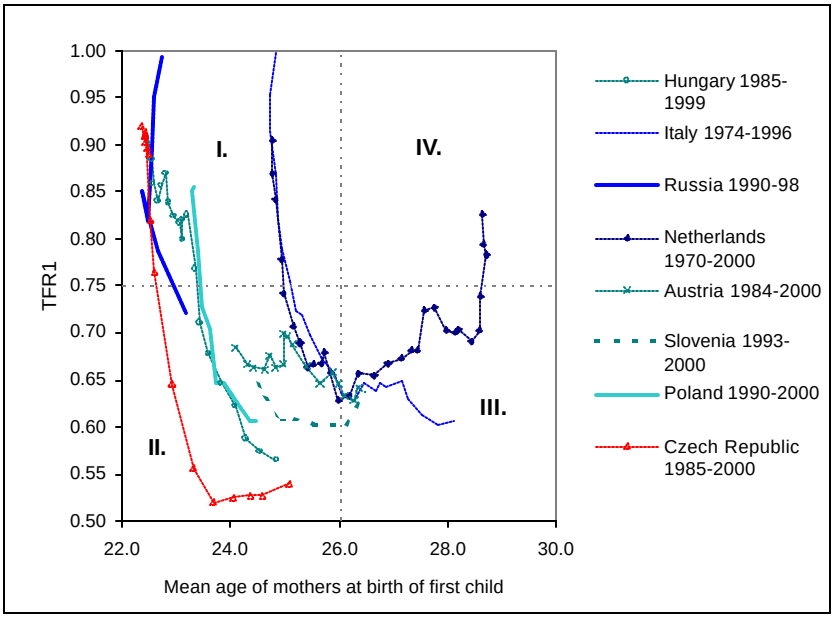


figure also illustrates the persistency of the postponement, discussed by Kohler et al. (2001): once initiated, the postponement transition in the low-fertility countries is long-standing and irreversible, leading to a substantial delay of childbearing among the mothers of first children.

Due to the shift towards later childbearing, fertility decline did not affect all age groups of women equally. High fertility rates of adolescent women declined steadily, initially in the *Catholic secularized* countries and in South-Eastern Europe, and by the mid-1990s in all Eastern European regions (Figure 5a). At the end of the 1990s, two Christian Orthodox regions – South-Eastern Europe and the Post-Soviet Republics – were characterized by considerably higher fertility rates among teenage women than Central Europe and the Baltic states. Because of the rapid decline of initially high fertility rates of young women in the *Catholic secularized* countries, the differences between them and the countries of the *Catholic belt* have diminished in time. Not surprisingly, the figure depicting

fertility rates of women past age 30 (Figure 5b) shows an inverse picture to the previous one, with the Christian Orthodox countries having the lowest fertility rates of older women after the steady decline in older-age fertility in the first half of the 1990s. The convergence of the two Catholic regions occurred due to the gradual increase in fertility among women aged 30+ in the *Catholic secularized* countries.

The over-30 fertility rates may serve as an indicator showing whether a recuperation of fertility at older ages is taking place (see Lesthaeghe and Moors, 2000). Since the mid-1990s, there were signs of fertility recuperation among women aged 30+ in the *Catholic secular* and Protestant regions and stabilization following the previous decline in other regions. More precise view on the changing fertility patterns by age is provided in Figures 6a and 6b displaying age-specific fertility rates in Central Europe[12], Romania, Lithuania, Moldova, Russia and the European Union[13] in 1989 and 1999. The 1989 fertility profile clearly differentiates quite homogeneous profiles of Eastern European countries from much older age-profile of the EU countries. In Eastern Europe, childbearing was highly concentrated into the narrow age span of young women, particularly ages 19-24. Moldova was an extreme case of very high fertility at that age. Since 1989, mothers in the EU countries have become even older and fertility profiles of Eastern European regions have been more differentiated along the age axis. In all of them, fertility decline caused "flattening" of the fertility schedules without a clear concentration of childbearing into few age groups. The childbearing patterns have become more heterogeneous, mirroring an increasing diversity of fertility strategies among various groups of women.

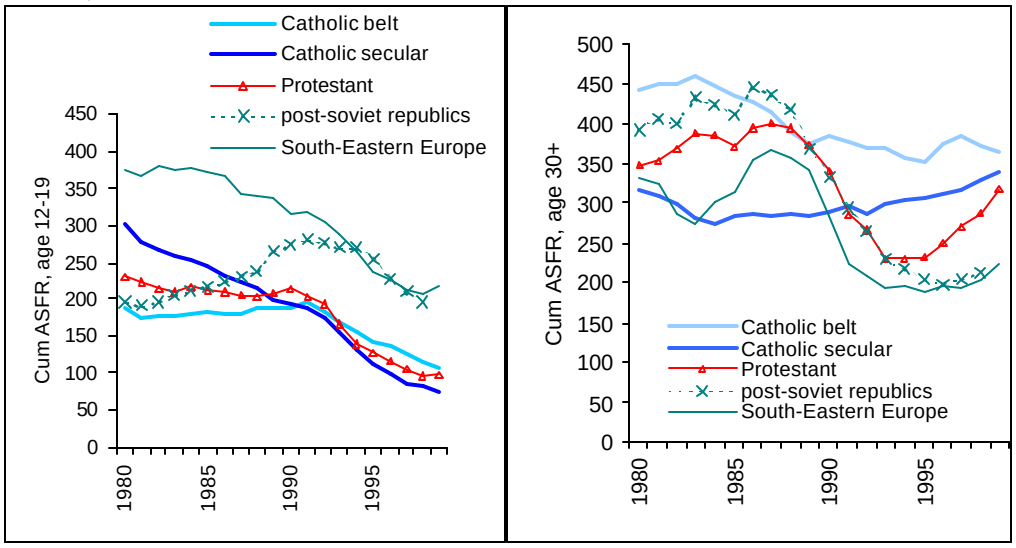
An increasing diversity in the timing of childbearing resulted in the increase in the interquartile range[14] in the age of first mothers. In the 1980s, childbearing was

[12] Arithmetic average of the age-specific fertility rates (single years of age) for the Czech Republic, East Germany, Hungary, Poland, Slovak Republic and Slovenia.

[13] Arithmetic average of the age-specific fertility rates (single years of age) for three distinctive countries – Finland, the Netherlands and Spain.

[14] Interquartile range in the mean age of first mothers is a difference between the age, when 25 % women (lower quartile) and 75 % women (upper quartile) give a birth to first child according to the distribution of fertility schedule in a given year.

Figure 5a and 5b: Cumulative age-specific fertility rate of women below age 20 (5a) and above age 30 (5b) in Eastern European regions, 1980-1999 (per 1000 women)



For definition of the regions, see Table 1

highly concentrated into a narrow age interval, with interquartile range at first birth standing between 4 and 5 years. Since then, it has increased considerably, reaching about 6.5 years in Bulgaria, Hungary and Romania (Figure 7). This evidence supports the idea of two different reproductive strategies coexisting temporarily besides each other: one pursued by the more family-oriented women who follow older habits of marrying early and having children early and another, typical of the "trend- setting" women postponing birth till higher age[15].

The age profile of childbearing in Central Europe has moved closer to the EU profile, while mothers in two Post-Soviet countries, Russia and Moldova,

[15] Sircelj (2000, p. 333) has characterized two types of family formation taking place in Slovenia – "traditional" and "modern"; similarly Fratzak (1998, p. 16) has identified two types of procreational behavior in Poland and Zakharov (2000, p. 307) has distinguished between the "modern family planners" and the "followers of traditional stereotypes" in Russia.

Figure 6a and 6b: Age-specific fertility rates of women in selected countries and regions around 1989 (6a) and around 1999 (6b)

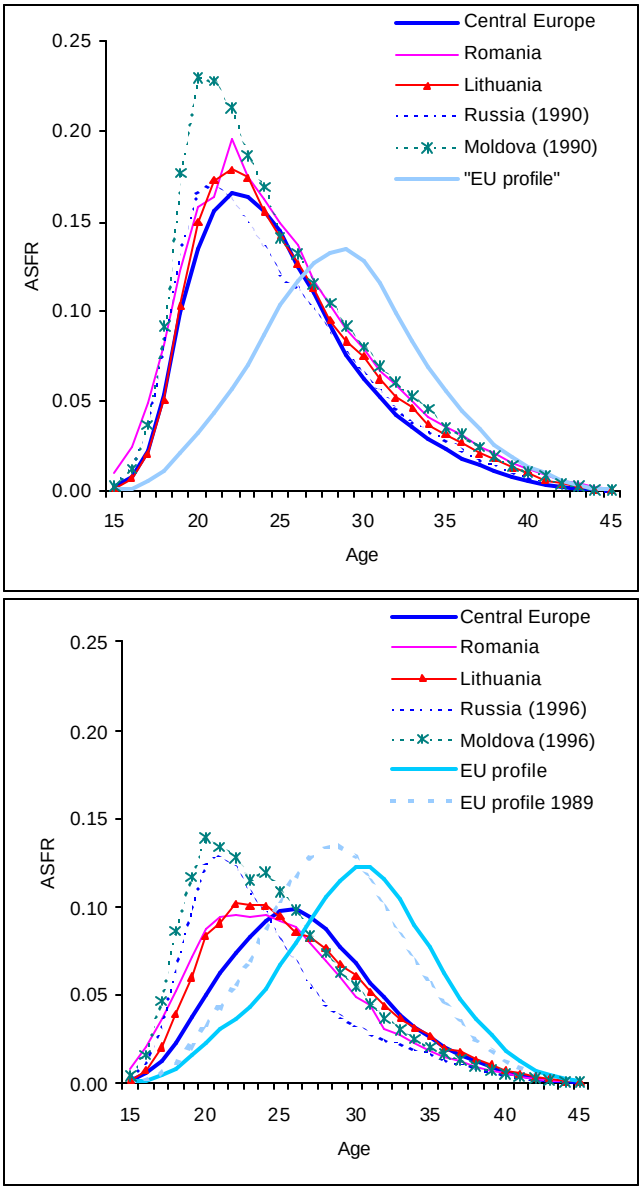
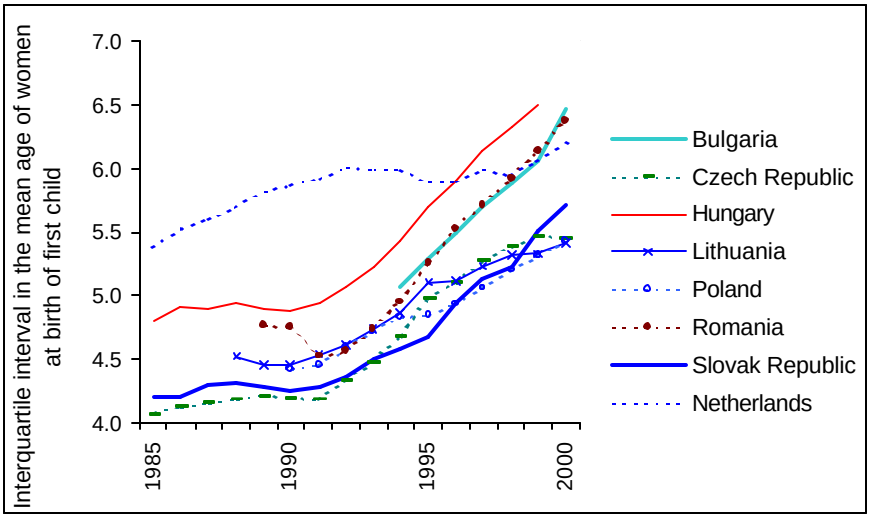


Figure 7: Interquartile range in the mean age of first mothers in some Eastern European countries and in the Netherlands; 1985-2000



remained very young. The position of Lithuania and Romania is intermediate. The relative changes in the age-profiles between 1989 and 1999 further illustrate this differentiation. In most countries (except Russia), there was a very strong reduction in fertility among young women aged 18 to 24, typically by 40 to 50 %, and exceeding 60 % among Central European women aged 19 to 21. Compared to the 1989 level, there was some recuperation in fertility among women aged 30+ in Central Europe, while other regions saw a decline in fertility also among older women, which was particularly strong in Romania [16].

[16] Romania is a special case due to the extreme pronatalist policy of N. Ceausescu's regime, which lasted till 1989. Most women in Romania did not have access to abortion and contraceptive means, and their fertility, particularly at older ages, considerably exceeded the desired fertility (see Hord (1991), Harsanyi (1993) and Muresan (1996)).

3.3. Decline of fertility due to the postponement of births? Timing effects in period fertility

What was the effect of changes in fertility timing on period fertility rates? Several researchers have already applied the fertility adjustment method proposed by Bongaarts and Feeney (1998 and 2000) in case of Eastern European countries (Macura et al., 2000[17], Philipov and Kohler, 2001, Philipov, 2002). Two points are discussed here: What would be the level of the TFR in the second half of the 1990s, would there be no changes in fertility timing? What proportion of period fertility decline since 1985 may be attributed to a real reduction in fertility *quantum* and what part of the fertility decline may be attributed to the temporary *timing (tempo) shifts*? The year 1985 serves as a benchmark year, when the timing changes still did not affect fertility in most Eastern European countries. Therefore the TFR in 1985 is, with some simplification, assumed to mirror only the fertility *quantum* (or the fertility level) of this year.

At the end of the 1990s the postponement of motherhood was already taking place in all post-communist countries and the adjustment shows considerably higher levels of fertility than the ordinary TFR (Table 2 and Table AP-3). Five Central European countries display a very similar level of the adjusted TFR in 1997-1999, ranging between 1.67 (Czech Republic, Slovenia) and 1.77 (Slovak Republic). These relatively high values indicate a strong influence of the postponement on the period fertility. The adjusted TFR in the three Baltic states is only slightly lower when compared with Central Europe (1.56-1.63), while the evidence for the South-Eastern Europe and Russia (data for 1994-1995) puts the adjusted TFR to a relatively low level, particularly in Bulgaria (1.38)[18]. The Russian situation is

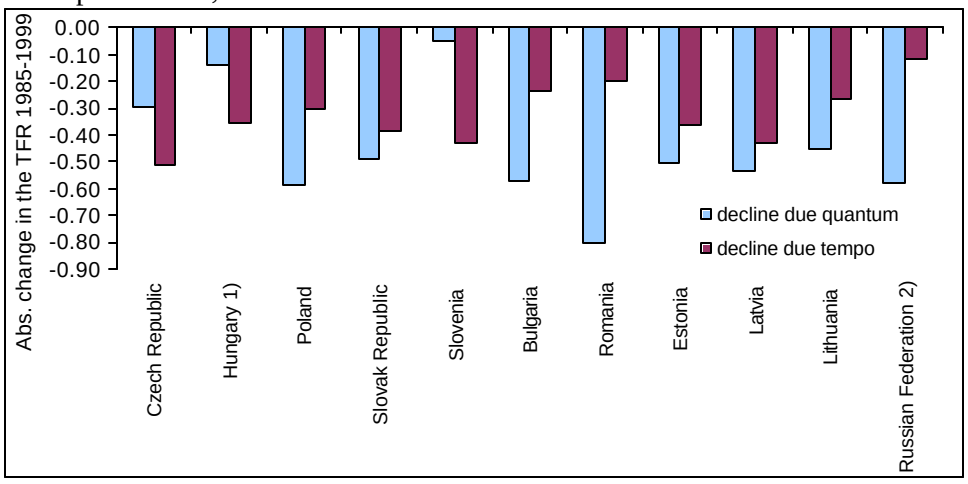
[17] The adjustment computation presented by Macura et al. (2000, Table 1) is not precise, since the reference year for the adjustment is not fully corresponding with the period used for the computation of changes in fertility timing.

[18] Philipov (2002, p. 11) pointed out that the TFR in Bulgaria might be underestimated due to the unregistered emigration. Performing a simple estimation of the TFR in 1998, he suggested that the TFR was more likely 1.3 instead the registered level 1.1, that is by 10 % higher. A comparison of the official population statistics for 1st January 2001 and the results of the Population Census for 1st March 2001 (BNSI, 2002) revealed that the registered population of women aged 20-39 exceeded the Census population by 5.2 %. Thus, provided that the Census was complete, the underestimation of the TFR is likely to be about 5 %. Similar underregistration probably occurred in several more countries with a fairly large unregistered emigration, namely in Croatia, Estonia and Latvia. The

likely to be typical of other Post-Soviet countries, where the delay of childbearing has been only modest so far. If the postponement of childbearing would come to an end, countries of Central Europe and the Baltic states would probably show higher period fertility levels than Bulgaria, Romania and the Post-Soviet Republics.

Due to the different pace of the postponement, countries with roughly equal period TFR in 1997-99, such as Bulgaria (1.14), Latvia (1.13) and the Czech Republic (1.15) display different levels of the adjusted TFR (1.38, 1.56, and 1.67 respectively). The role of the timing change was uneven across the region. In the Czech Republic, Hungary and Slovenia, the TFR decline since 1985 was mainly driven by the postponement of childbearing (the *tempo* component in Figure 8). In two other Central European countries, Poland and Slovakia, and in the Baltic States the effects of the timing change were substantial as well (between 33 and

Figure 8: Estimates of the *tempo (timing)* and *quantum* components in the decline of the period TFR, 1985-1997/99



Notes: 1) Recent figure refers to the 1997-1998 period
2) Recent figure refers to the 1994-1995 period

increase in the TFR in Estonia and Latvia in 2000 was therefore partly an effect of the adjusted population statistics following the results of the population censuses.

45 %). On the other hand, the postponement of births had a smaller depressive effect on the period TFR in Bulgaria (30 %), Romania (20 %), and Russia (16 % in 1994-1995).

3.4. Period fertility by birth order: increasing differences

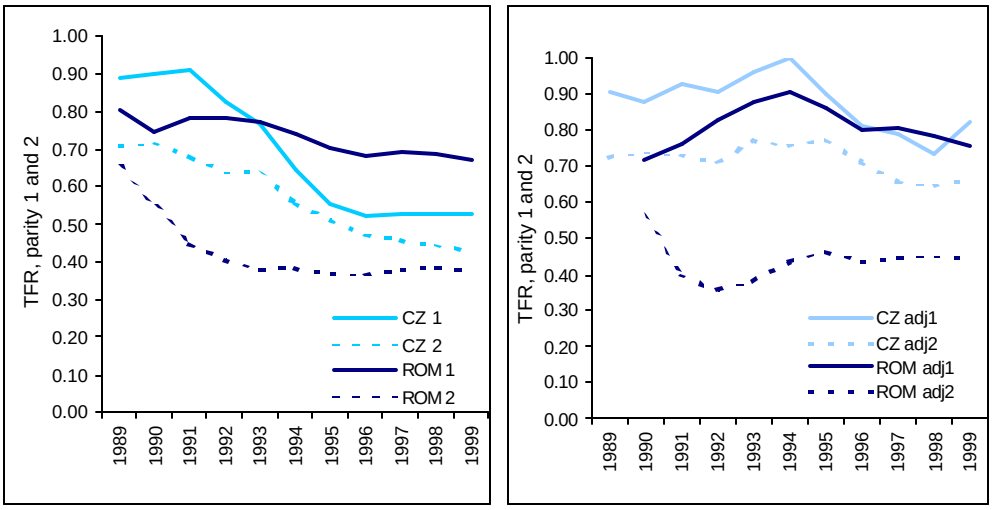
The analysis of fertility rates by birth order, based on incomplete evidence[19], further depicts increasing differences between Eastern European regions as well as the importance of the timing changes discussed in the previous section. The first-parity TFR (TFR_1) was for several decades approaching the level of 1.0 as almost all women had at least one child. Only 5 to 10 % of Eastern European women born around 1960 remained childless. Since the 1980s, Central Europe has emerged as a region with low levels of the TFR_1, reaching the average of 0.57 in 1999[20] (see Table AP-7). Other regions, especially the Post-Soviet Republics, were characterized by the higher levels of the TFR_1 throughout the 1990s.

The position of different regions with regard to the period fertility of the second birth order is contrasting with the first one. Generally, countries with currently higher TFR_1 have seen more intensive decline in the second-parity TFR and countries with low levels of the TFR_1 rank higher with respect to the TFR_2. Figure 9a illustrates this contrast in the case of the Czech Republic (a strong reduction in the TFR_1) and Romania (initially a strong decline in the TFR_2). This is partly related to the different speed of the postponement of births across Eastern Europe. In countries with the strong reduction of the TFR due to the *timing effects*, there was a strong decline in the first-parity TFR and a less pronounced reduction in the TFR of parity two. This pattern is typical of Central European countries: many women are postponing or even giving up childbearing, but once they have a child, a large majority of them decides to have the second one. In contrast, in countries, where the postponement was slower, with the fertility decline driven mostly

[19] For Croatia, Belarus, and the former GDR, no data on the parity distribution of births by age of mother or the age structure of women were available for the 1990s. For Ukraine and Moldova, no recent data were available.

[20] This cannot, however, be interpreted as an indicator that 43 % of women will potentially remain childless. A large part of the period fertility decline is due to the postponement of births and not due to definitive resignation of women on childbearing.

Figure 9a: TFR of the first and second parity in the Czech Republic and Romania, 1989-2000
Figure 9b: Bongaarts-Feeney adjusted TFR of the first and second parity in the Czech Republic and Romania, 1989-2000



by the *quantum effects*, there was a strong initial reduction in the second-parity fertility. The parity-specific adjustment of the TFR for the *timing effects* in the Czech Republic and Romania over the 1990s (Figure 9b) shows that the major difference between them is not in the first-parity fertility, but in the proportion of women who choose to have second child once they have one. If the fertility rates and the pace of the postponement of the late 1990s would continue, about 80 % of Czech and Romanian women would ultimately have a child; however, 70 % of Czech women and only 40 % of Romanian women would have the second one. Romanian pattern of parity-specific fertility change was also characteristic for Bulgaria and for the Post-Soviet Republics.

This evidence may be interpreted in a following way: in South-Eastern Europe and in the Post-Soviet countries most women want to have at least one child, despite very difficult living conditions. However, among women having first child, much fewer are willing to have another one. This indicates a move towards

general acceptation and spread of one-child family model. Two short remarks on the attitudes towards childbearing among Russian women made by Avdeev and Monnier (1995, p. 34) illustrate this point. Widespread attitude coined as "at least one child, at most two" is combined with a strong effort to have really at least one: "Come what may, Russian women have one child at least, unless they are sterile". Higher progression to the second child in Central Europe may be attributed to a more stable environment, but selection effects play a role there as well. We may assume that women who are having children now are especially those behaving more "traditionally", while women postponing births will not be so much willing to embrace the two-child family norm in the future.

The differentiation of countries according to the cultural-religious tradition shows interesting regional patterns regarding the third and higher-parity fertility (TFR_{3+}). Since 1990, three Christian Orthodox countries with available data - Bulgaria, Romania and Russia - have reached the lowest levels of fertility of the third and higher parity. In Russia, in 1994-1996 the TFR of third and higher birth order contributed only 10.4 % to the overall TFR, indicating that the families with three and more children have been virtually disappearing. On the other hand, in several countries of Central Europe (Hungary, Poland, Slovak Republic), the TFR_{3+} formed around 25 % of the overall TFR, indicating that many women there continue having larger families. Generally, there was a trend towards the convergence between the two groups of Catholic countries, with the more secularized countries experiencing only a very slight drop in higher-order fertility and more religious countries experiencing a gradual decline. The stability of fertility rates at higher parities in many Central European countries may be partly associated with the higher fertility among the distinctive minority of Romany people (Gypsies), especially in the Czech Republic, Hungary and in the Slovak Republic.

Considering current distribution of period fertility by parity, the Post-Soviet countries and to a smaller extent also the Baltic states and South-Eastern Europe may witness further reduction of the already very low TFR. Due to the substantial decline in the second and higher-parity TFR, TFR_1 is contributing by 50 to 60 % (even 62 % in Russia in 1995) to the overall TFR. Potential speeding-up of the postponement of first births, inevitably leading to the decline in the TFR_1, may bring about further decline in period fertility, with the TFR dropping below 1.0.

3.5. Diffusion of non-marital childbearing

A rapid increase in the proportion of children born out of marriage was – besides the changes in the level and timing of period fertility – the most characteristic feature of recent fertility transformation in Eastern Europe. The spread of childbearing outside marriage is associated with two related developments: decline in marriage rates and increasing popularity of informal unions.

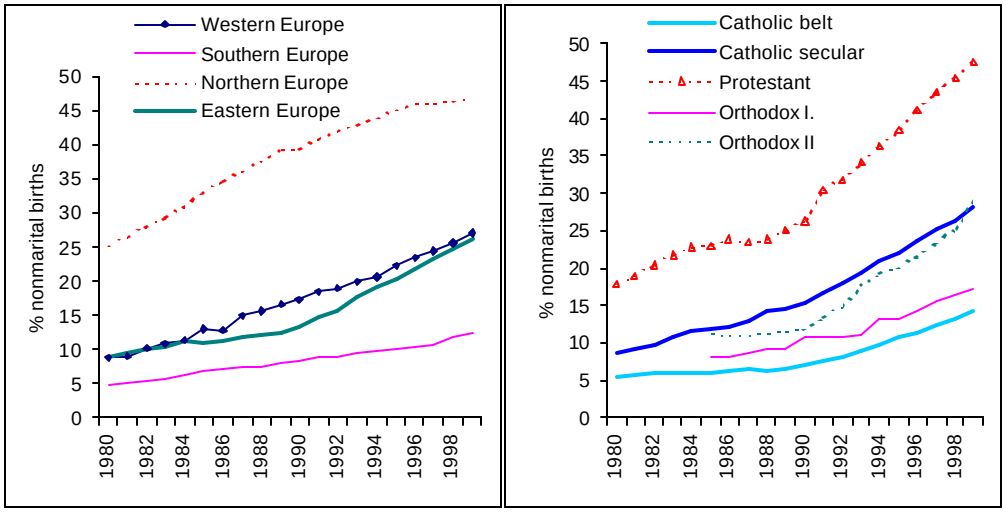
Till the 1980s the proportion of children born out of marriage did not exceed 10 % in most countries of Eastern Europe. In several countries, particularly in Estonia, Slovenia, and in the former GDR, there was an earlier diffusion of non-marital childbearing and cohabitation. This situation changed during the 1990s, when all Eastern European countries saw an upsurge in the proportion of children born out of marriage (Figure 10a). However, the differentiation within Eastern Europe in the intensity of non-marital childbearing has increased enormously (Figure 10b).

The cultural-religious division establishes a clear differentiating factor for the spread and plausibly also for the acceptance of non-marital childbearing. Countries with a strong Protestant tradition – Estonia, former GDR and Latvia – experienced the most dynamic upsurge in non-marital childbearing during the 1990s. With the average proportion of non-marital births reaching 48 % in 1999, these countries resemble a similar situation in (also traditionally Protestant) Northern Europe. As more than half of the first children were born out of marriage, the complete disconnection of marriage and reproduction was taking place there over the 1990s[21].

Among the historically Catholic and Christian Orthodox countries, the dividing line is established according to the degree of traditionalism and secularization in these regions. There is an increasing differentiation between the *Catholic secularized* countries, where the proportion of non-marital births reached values

[21] In 1998, the birth rate in East Germany among unmarried women was higher (27.8 births per 1000 unmarried women aged 15-49) than among married ones (27.6 per 1000). This pattern was observed for the first time (see Grünheid and Roloff, 2000, p. 35, Table 12)

Figure 10a: Proportion of children born out of marriage in European regions, 1980-1999
Figure 10b: Proportion of children born out of marriage in Eastern European regions, 1980-1999 (cultural-religious regions)



"**Orthodox I.":** Belarus, Moldova, Ukraine
"Orthodox II": Bulgaria, Romania, Russia
For definition of other regions, see Table 1

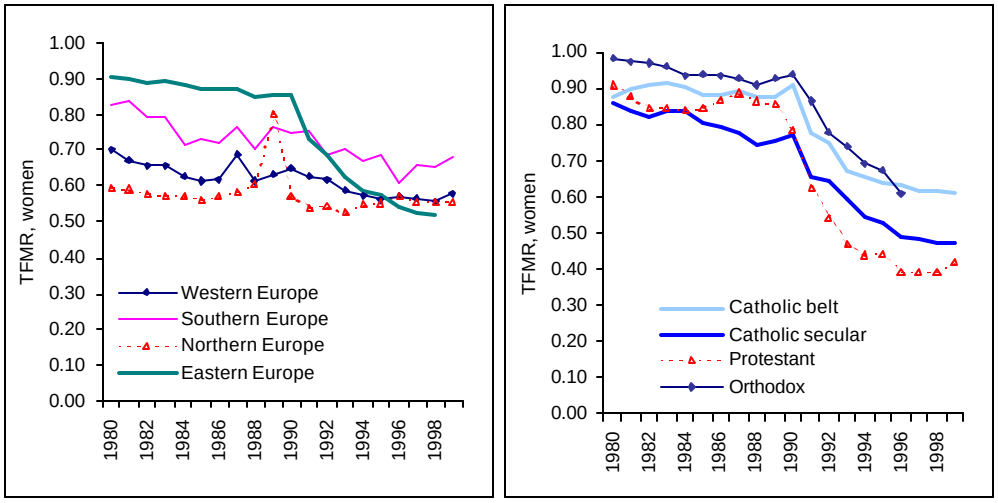
comparable with Western European countries and the *Catholic belt* countries, experiencing only a gradual increase in the share of non-marital births. Their position resembles the Catholic countries of Southern Europe. Similarly, there was an increasing differentiation between the two groups of traditionally Orthodox countries; one that may be coined as more "traditional" (Belarus, Moldova, Ukraine)[22] and another manifesting more "modern" behavior (Bulgaria, Romania, Russia). In the latter group, the proportion of non-marital births has been increasing considerably throughout the 1990s.

[22] It is difficult to define precisely what "tradition" means in these societies. In my view, it is a mixture of religious revival (present especially in Moldova and Ukraine) and a nostalgia for the old Soviet times –manifested by a high popularity of the Communist and extreme left political parties.

Increase in non-marital childbearing was accompanied by a declining propensity among women to marry, and particularly to marry at an early age. The total first marriage rate of women (TFMR), till 1990 by far highest among European regions (Figure 11a), has recently reached low levels typical for Western and Northern Europe (average value for the post-communist countries was 0.52 in 1999). Widespread postponement of first marriages had a depressing effect on the first-marriage rates, which would otherwise be considerably higher.

Regional differences in the intensity of first marriages (Figure 11b) have followed the cultural-religious division, with the Christian Orthodox and the more traditional Catholic countries showing less pronounced decline in the first marriage rates. The decline was steep in the Catholic secularized countries, with

Figure 11a: Total first marriage rates (TFMR) of women in European regions, 1980-1998/99
Figure 11b: Total first marriage rates of women in Eastern European regions 1980-1998/99 (cultural-religious regions)



Eastern Europe: Bulgaria, Croatia, Czech Republic, East Germany, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation, Slovak Republic, Slovenia
Orthodox countries: Bulgaria, Romania, Russia
For definition of other regions, see Table 1

average values of the TFMR below 0.5 since 1996, and even more in countries with the Protestant tradition (TFMR below 0.4 since 1996). In most countries, postponement of first marriages has been stronger than the postponement of first births. Non-marital births have become common especially among young women below age 25, while older women are more likely to marry before having children. In Estonia and Bulgaria, similarly to Scandinavian countries, the mean age of first mothers has become lower than the age of first-marrying women (in Estonia 23.8 vs. 24.5 years in 1999).

3.6. Increase in cohabitation or expansion of lone motherhood?

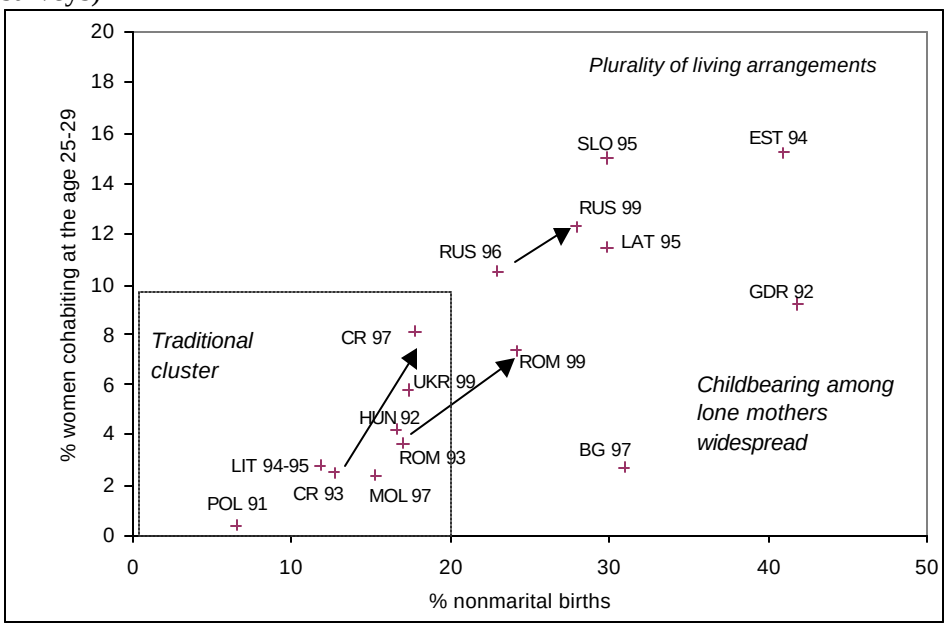
Was the spread of non-marital births associated with the diffusion of alternative forms of family, namely with the increase in cohabitation, or was it the expansion of lone motherhood taking place in the post-communist societies? As the data on informal unions are not regularly collected or surveyed[23], we have to rely on the evidence provided by two large survey projects - FFS (Fertility and Family Survey) and RHS (Reproductive Health Survey) that have taken place at least once in almost all post-communist countries during the 1990s[24]. The major disadvantage of combining these two sources lies in a comparison of countries at different stages of demographic and social change. Due to the dynamic changes in the region over the 1990s, it is very likely that the picture obtained by the combination of evidence from different countries over a period of 9 years (1991-1999) is distorted. However, keeping this fact in mind, it is still valuable since these are the only extensive data sets on cohabitation as well as on contraceptive use and life transitions in Eastern Europe. Furthermore, countries that appeared in an extreme position at the beginning of the 1990s (e.g. Poland with virtually non-existent cohabitation), are highly unlikely to appear on the opposite side of the spectrum in 1999.

[23] Some social surveys as well as the data collected by the population censuses provide information on living arrangements. Unfortunately, the census data frequently underestimate the extent of cohabitation, as especially young people often do not report it. For instance, in the Czech Republic many people do not want to report living in the apartment, where they are not officially registered.

[24] Among 16 regions considered in the paper, only in Croatia, Belarus and in the Slovakia neither FFS, nor RHS has been conducted in the 1990s.

Figure 12 compares the proportion of non-marital births with the proportion of women living in consensual union at age 25-29 in the 1990s[25]. In most post-communist societies, relatively few women were cohabiting at that age (typically less than 5 %), especially in the early 1990s, with highly traditional Poland (0.48 % in 1991) being an extreme case. Nevertheless, there were substantial regional differences, with some countries showing both higher prevalence of cohabitation and non-marital childbearing (especially Estonia in 1994 and Slovenia in 1995). In these societies, cohabitation had been largely accepted already during the communist era. In addition, two regions – Bulgaria in 1997 and the former GDR

Figure 12: Non-marital births (%) and proportion of women cohabiting at age 25-29 in Eastern European countries (various years – data from the FFS and RHS surveys)



[25] The preparation of this figure was inspired by a similar figure for European countries, compiled by Lesthaeghe and Moors (2000, p. 157, Figure 23). The age-group 25-29 was selected because it has recently become more important for childbearing than the 20-24 age group and cohabitation among these women indicates stronger preference for cohabitation than among the younger ones, who often cohabit only for a short period before marriage.

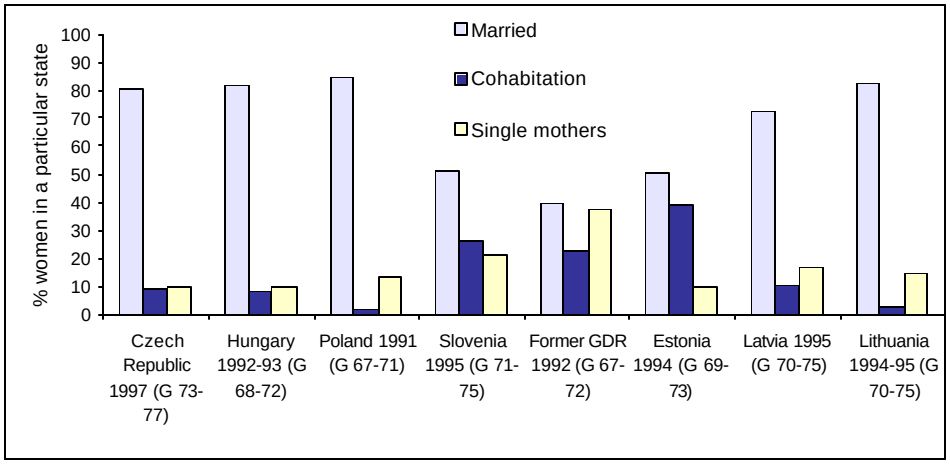
in 1992 – display relatively low prevalence of cohabitation (less than 10 %) combined with a high proportion (over 30 %) of non-marital births. Childbearing among single women seems to be widespread there[26]. Despite a large heterogeneity, the direction of change towards increased non-marital childbearing coupled with higher prevalence of cohabitation is clearly illustrated for the three countries with comparable data on development over time: the Czech Republic (1993 and 1997), Romania (1993 and 1999) and Russia (1996 and 1999). Recent evidence, provided by the European Values Study data of 1999 suggests that the increase in the popularity of cohabitation in the post-communist countries since the early 1990s was spectacular. Despite the small national sample sizes, the survey shows that in the countries of Central Europe (except of Poland and Slovakia) and Baltic countries (except of Lithuania), cohabitation has become a common living arrangement among young people aged 20-29 (Lesthaeghe and Surkyn, 2002, p. 5 and Table 2).

The FFS surveys also investigated partnership status of women at first birth (Table 15 in the Standard Country Report Tables); a distinction was made between marriage, consensual union and no partnership. The results depict a large variety not only in the proportion of children born within marriage, but also in the split of non-marital births between consensual unions and single mothers (see Figure 13 for women aged 20-24). Low status of cohabitation in two traditionally Catholic societies, Poland and Lithuania seems to be a strong barrier to living and having children in non-marital union and explains a small prevalence of non-marital births, which were almost entirely taking place among single mothers. Among countries with a large proportion of first children born outside marriage, only in Estonia is cohabitation a typical setting for non-marital childbearing[27]. In Slovenia, cohabitation was only slightly prevailing over single motherhood, while

[26] Most countries applied policies that disfavored consensual unions, such as advantageous loans or provision of housing for the newlywed couples. The East German policy, which granted a special status to single mothers since 1976, was an exception which created an incentive for non-marital childbearing (Monnier 1990).

[27] According to Katus et al. (2000, p. 133), cohabitation has spread steadily in Estonia since the 1960s. Among women born in the early 1970s (native women only), it accounts for more than 90 % of first partnerships (see also FFS, 1994). While about four fifths of first births are conceived outside registered unions, births to single mothers formed only 7 to 10 % of all births over a long period of time. In this sense, Estonia depicted similar trends to the Scandinavian countries.

Figure 13: Partnership status at first birth, women aged 20-24 with at least one child (FFS data)



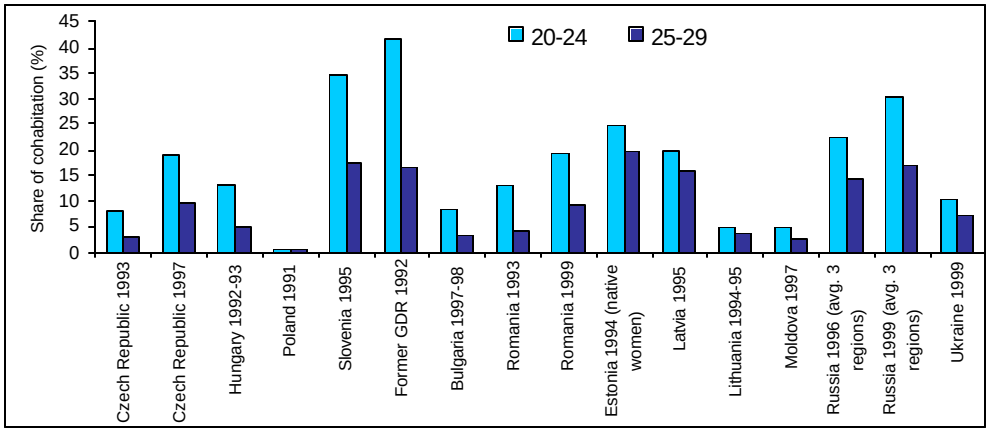
East Germany, where a large proportion of first births takes place outside marriage and particularly among single women, constitutes a specific case[28]. As East Germans have a very tolerant approach toward alternative living arrangements, the proportion of single mothers is striking. The question remains how the previous population policies influenced this pattern (see footnote 24) and whether it is more a result of a deliberate choice of women or whether it is a "commitment crisis" indicating the lack of male interest and support for family[29].

The diversity of Central and Eastern Europe with regard to the extent of cohabitation is further depicted in Figure 14, showing the proportion of women cohabiting (percentage of all women living in unions) at age 20-24 and 25-29. Although cohabitation was not more popular than marriage in any country and at any age group, the variety is apparent: less than 5 % of women living in union at age 20-24 or 25-29 cohabited in Poland in 1991, in Lithuania in 1994-95 and

[28] Among women aged 20-24 and having at least one child in 1992, only 39.6 % had first child within marriage, while 37.6 % were single and 22.8 % were cohabiting. Among 25-29 years old women, one third had first child when they were living without partner.

[29] For a discussion on non-marital childbearing in East Germany, see Konietzka and Kreyenfeld (2001).

Figure 14: Share of cohabitation on the total number of unions (%) among women aged 20-24 and 25-29, various surveys (FFS and RHS)



in Moldova in 1997. On the other hand, cohabitation was common in the former GDR, in Slovenia, in Russia and in Estonia. Higher prevalence of cohabitation among young women aged 20-24 is a result of two trends. Cohabitation among younger women often serves as a short period of living together before marriage ("trial marriage"). At the same time, younger generations have relaxed attitudes toward traditional living arrangements and for each new cohort, cohabitation is increasingly acceptable and more frequently experienced living arrangement.

3.7. Fewer abortions, better contraception: a stealthy contraceptive revolution

Till the late 1980s, reproductive behavior of women in Eastern Europe was characterized by a limited choice of modern contraception, lack of sex education, and generally irresponsible approach towards family planning coupled with a high prevalence of induced abortion, in most countries provided on request for free since the second half of the 1950s[30] (see Frejka, 1983; Blayo, 1991 and Stloukal,

[30] In some countries, access to abortion was later limited or abortion policy was changing over time as a part of the pronatalist measures. Romania, enforcing the ban on abortion for most women since 1967 and allowing no access to contraception, was an exception among Eastern European countries.

1996). As most societies were quite tolerant to pre-marital and non-marital sex, women experienced first sex relatively early and usually before marriage[31]. Nevertheless, first sex occurred mostly without the use of any contraceptive method and first pregnancy often followed soon after the onset of reproductive life. Since women pregnant for the first time usually did not opt for an abortion, marriage – commonly entered by a pregnant bride – and birth soon followed. Abortion was widespread among women with two or more children. Generally low control of people over their reproduction resulted in a high proportion of "mistimed" or even "unwanted" births. The important question to investigate is whether the post-communist countries experienced the "contraceptive revolution" and the move toward the ideal of the "perfect contraceptive society" during the 1990s. In other words, has the specific "abortion culture" of Eastern Europe disappeared?

Besides the special case of Poland, where a strict anti-abortion law was established in 1993[32]; available statistics for other countries indicate a significant decline in the total induced abortion rates (TIAR) over the 1990s[33] (Table 3). The 1990s thus were the period of simultaneous strong decline in birth and abortion rates, contrasting with the previous "mirror effect" between induced abortion and fertility, typical for Eastern Europe. Although the decline in abortion rates was registered in all post-communist countries, there was a lasting division between countries with fairly low abortion rates and countries, where the incidence of induced abortion still remained high at the end of the 1990s. All Central European countries and Lithuania belong to the first group, with TIAR below 1.0. Values of TIAR around 0.5 registered in 1999 in the Czech Republic, Slovenia and in the Slovak Republic, are close to the abortion rates of many Western European countries such as France and Sweden. Other countries with available data had the

[31] According to the FFS surveys, among women born in the second half of the 1960s, median age at first sex varied between 17.6 years in the Czech Republic (birth cohorts 1968-72) and 20.1 years in Lithuania (birth cohort 1965-75). In several countries (Moldova, Romania), first sex often took place within marriage, but in most countries, first sex was typically non-marital, For instance, in the Czech Republic only 0.4 % of sexually experienced women reported they had first sex after marriage. (RHS, 1993).

[32] For a valuable analysis of the previous abortion debate, see Kulczycki (1995); for more recent development, see FEDERA (2000).

[33] Part of the recorded decline in abortion rates may be due to the incomplete registration of abortions in the 1990s in some countries.

Table 3: Estimates of the total induced abortion rate, 1985-1999

	1985	1989	1990	1995	1996	1997	1998	1999
Central-Eastern Europe								
Croatia	..	..	..	..	..	0.30	..	0.25
Czech Republic	1.13	1.50	1.51	0.67	0.64	0.59	0.55	0.53
Hungary	1.09	..	1.22	1.06	1.06	1.03	0.96	0.92
Poland 1)	..	..	*0.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Slovak Republic	0.92	1.23	1.23	0.75	0.62	0.55	0.52	0.47
Slovenia	1.19	1.04	0.96	0.72	0.68	0.65	0.62	0.59
Former GDR	0.74	0.63	0.57	..	..	..	..	
South-Eastern Europe								
Bulgaria	1.78	2.25	2.37	1.69	1.71	..	1.52	1.25
Romania 2)	1.92	1.19	6.07	3.04	2.74	2.07	1.61	1.53
Baltic Republics								
Estonia	..	2.17	..	1.70	1.63	1.62	1.53	1.46
Latvia	..	2.21	..	..	1.28	1.16	1.09	1.07
Lithuania	..	1.68	..	1.14	1.02	0.83	0.78	0.70
Post-soviet republics								
Belarus	..	3.06	..	..	..	2.04	..	
Moldova	2.72	2.67	2.20	1.55	1.22	..	1.17	
Russia	3.66	3.31	3.05	2.14	..	..	..	
Ukraine	..	2.65	..	..	..	..	..	

Notes: Most data based on statistics of legal induced abortions and age structure of women by 5-year age groups. Estimates for Latvia until 1998, Lithuania, Moldova and Russia are based on data for age groups 10-14, 15-19, 20-34 and 35-49 only. Some data (e.g. for the Post-Soviet Republics) may be incomplete due to underregistration.

1) Abortions illegal (with few exceptions) since 1993

2) Till 1989 legal abortions only. Author's estimate of the TIAR for all induced abortions (including illegal abortions) in 1989 is 5.4

Sources: EUROSTAT (2001, 2002), UN (1997, 1998, 2000, 2001), Avdeev et al. (1995), Blayo (1991), Council of Europe (1996), CNPS (1998), CR POPIN (2001), DASS (1999), Infostat (2000), SORS (2000), Stloukal (1996)

level of the TIAR between 1.0 and 2.0 around 1999. A spectacular decline of abortion rates occurred in Romania between 1990 (TIAR 6.0) and 1998 (TIAR 1.6). Extremely high level of abortion rates in 1990 was a reaction to the legalization of abortion in December 1989 under the conditions of still very limited access to and information about contraceptive means.

Table 4 presents the distribution of contraceptive use among women living in union aged 25-29 according to various RHS and FFS surveys[34]. The proportion of women reporting current use of any contraceptive method varied between 52 (Poland) and 76 percent (Hungary). Bulgaria with a very low level of the use of any method, reported only by 42 % of women in union aged 25-29, and yet not extremely high abortion rates is a notable exception.

The heterogeneity in the patterns of contraceptive use in Eastern Europe is manifested in two ways. Some countries display a persistent popularity of traditional contraceptive methods – *coitus interruptus* and periodic abstinence – which were still used by 30 to 50 % of women in Ukraine (1999), Romania (1993

Table 4: Contraceptive use among women in union aged 25-29, FFS and RHS surveys

	Pill	Condom	IUD	Modern 1)	Traditional 2)	Total 3)	No met. 4)	No met. 5)	Unknown
Czech Republic 1993	12.5	19.8	15.3	49.6	22.4	72.0	.	27.2	0.8
Czech Republic 1997	26.7	18.4	7.4	56.8	9.3	61.8	.	19.8	18.4
Hungary, 1992-93	50.3	6.4	12.3	71.3	6.0	75.6	8.9	21.5	2.9
Poland 1991	3.6	11.0	6.6	23.7	32.2	52.2	6.3	20.5	27.3
Slovenia 1995	29.7	9.8	16.5	57.3	13.5	71.4	9.6	21.9	6.7
Former GDR 1992	64.4	0.0	3.9	71.1	3.3	72.0	20.6 6)	28.0	.
Bulgaria 1997-98	9.4	11.4	3.4	25.1	17.1	42.0	37.8	48.6	9.4
Romania 1993	4.0	5.5	6.3	17.5	48.4	65.9	.	34.1	.
Romania 1999 (age 25-34)	11.9	10.5	8.0	35.6	33.5	70.1	.	29.9	.
Estonia 1994 (native women)	5.8	17.7	31.5	55.9	21.4	63.9	12.2	36.1 7)	0.0
Latvia 1995	11.2	15.4	23.8	50.8	8.1	58.8	10.0	24.7	16.5
Lithuania 1994-95	4.4	15.6	17.8	38.9	18.0	56.7	19.4	34.4	8.9
Moldova 1997 (age 25-34)	3.0	6.5	41.6	54.0	21.8	75.9	.	24.1	.
Russia 1996 (avg. 3 regions)	7.5	30.3	12.3	55.0	16.8	71.8	.	28.2	.
Russia 1999 (avg. 3 regions)	7.4	25.1	15.6	53.3	19.5	72.8	.	27.2	.
Ukraine 1999	3.3	16.0	19.3	42.0	29.7	71.6	.	28.4	.

1) The pill, condoms, the IUD, injections, diaphragm, sterilization
2) Periodic abstinence and withdrawal
3) Due to the use of multiple methods, the sum of the respondents using modern and traditional methods may be higher than the total number of contraceptive users
4) No contraceptive use among fecund, not pregnant and sexually active women
5) Total number of women not using contraception, including pregnant and infecund women.
6) Including unknown cases
7) Including 19 % of women reported as sexually inactive, this figure probably includes unknown cases.

[34] The figures are not adjusted for the non-response rate, which was quite high in some countries (e.g. in Poland, see Table 4).

and 1999) and in Poland (1991). In these countries, as well as in Lithuania (1994-95) and Bulgaria (1997-98) the use of modern contraception (condoms, the pill or the IUD) was lower than 40%. Only in Central Europe (with a notable exception of Poland), traditional methods are currently used by a small minority of women. Another differentiation was in respect to the usually used contraceptive means. The pill has become the main method of contraception among younger women in Central Europe (again with the exception of Poland in 1991), while in the Baltic countries and in the Post-Soviet Republics, the proportion of women using the intrauterine device (IUD) by far outnumbers a small number of women using the pill[35].

The time trends, provided by data for the Czech Republic (1993 and 1997) and Romania (1993 and 1999) depict an increasing popularity of the pill, which is replacing the IUD and the traditional methods of contraception[36]. These trends are common across the whole Eastern Europe, but they are evidently taking place at a very different pace.

3.8. Declining fertility and abortion rates among teenage women

Till the early 1990s, a large proportion of women in Eastern Europe gave birth to a child before reaching age 20[37]. The evidence on changes in fertility and abortion rates among adolescent women during the 1990s may serve as a starting point for

[35] The 1992 FFS data for East Germany seem to indicate that the former GDR had unique contraceptive patterns as compared with other post-communist countries, namely very high proportion of women using the pill and almost non-existent use of the traditional methods. However, since the reported use of condoms and the IUD is also extremely small and this pattern holds for all age groups of women, one may wonder whether these data mirror absolutely dominant position of the pill as a contraceptive method of choice in East Germany or whether this finding is an artefact caused by incompleteness or the low reliability of the survey.

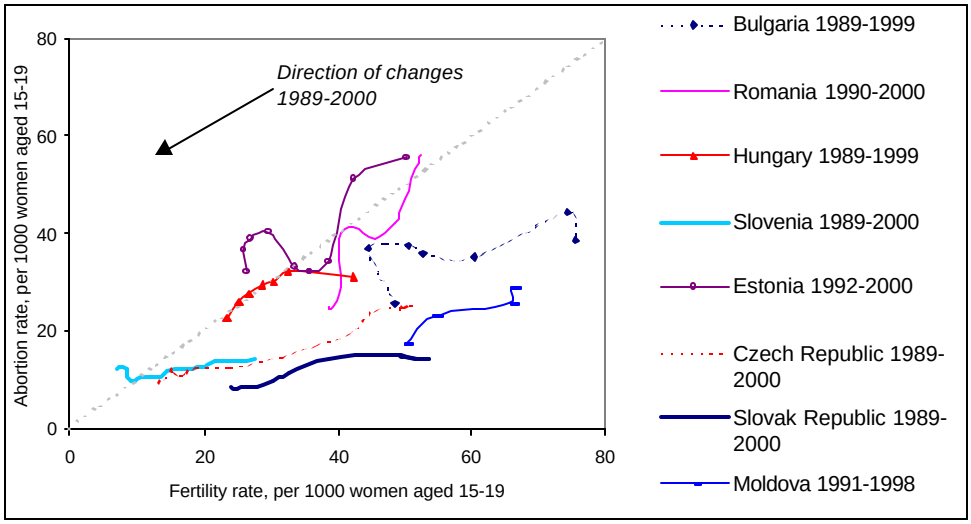
[36] A comparison of the RHS surveys conducted in three regions of the Russian Federation in 1996 and 1999 does not reveal substantial changes in the patterns of contraceptive use. The economic crisis of August 1998 might have slowed down the spread of modern contraception, which has become unaffordable for many people.

[37] According to the age- and parity-specific fertility rates at the end of the 1980s, the proportion of women having at least one child before the age 20 varied between 14 % (Poland 14.4 % in 1990, Lithuania 16.7 % in 1989) and 29 % (Bulgaria in 1987, Moldova in 1990).

further discussion on the background of fertility changes. The behavior of the youngest group of women is most sensitive to broad social and economic changes. They are likely to be flexible in realizing or not realizing their fertility intentions early in life, to be less strict in following previous behavioral norms, to take largest advantage of new opportunities offered by democratic society (especially of prolonged education) and unlike their parents, to use effective contraception from the onset of their sexual activity, provided that it is affordable and easily accessible. Kosunen and Rimpelä (1996; quoted in Karro 1997, p. 12) proposed that increasing use of contraceptives first affects the fertility rates of teenagers and later the abortion rates.

Figure 15 illustrates mutual changes in fertility and abortion rates among women aged 15-19 in eight countries between 1989 and 2000. Apart from the changes in fertility and abortion rates, the "trade-off" between these two – prevailing

Figure 15: Pregnancies of teenage women: Changes in fertility and abortion rates among women below age 20 between 1989 and 2000 (rates per thousand women aged 15-19)



Sources: EUROSTAT (2001, 2002), Council of Europe (1996 and 2001), Blayo (1991), CR POPIN (2001), CNPS (1998), DASS (1999), Infostat (2000), UN (1997, 1998, 2000 and 2001)

preferences either for birth or for abortion among pregnant women –may be established. Over this period, young women in all countries have experienced both lower abortion and birth rates, with most of them showing a more intensive decrease in the birth rates (Romania is an exception of a more intensive decline in abortion rates). Low abortion and fertility rates in Central Europe, especially in the Czech Republic, Slovak Republic and Slovenia, indicate a move towards the low willingness of adolescent women to have children, typical for Western European societies, as well as the widespread contraceptive use. Other countries, particularly Bulgaria and Moldova, still display high rate of pregnancies among teenage women.

Despite increasing preference for abortion among pregnant teenagers, fertility rates among teenage women in most countries remain higher than abortion rates and the regional contrasts have increased. While in Slovenia about 20 per 1000 teenage women got pregnant in 1998 and 60 % of them opted for an abortion, in Moldova about 70 per 1000 teenage women got pregnant and only a quarter of them opted for an abortion.

4. NEW CONSTRAINTS, NEW OPPORTUNITIES : FERTILITY CHANGE IN A BROADER PERSPECTIVE

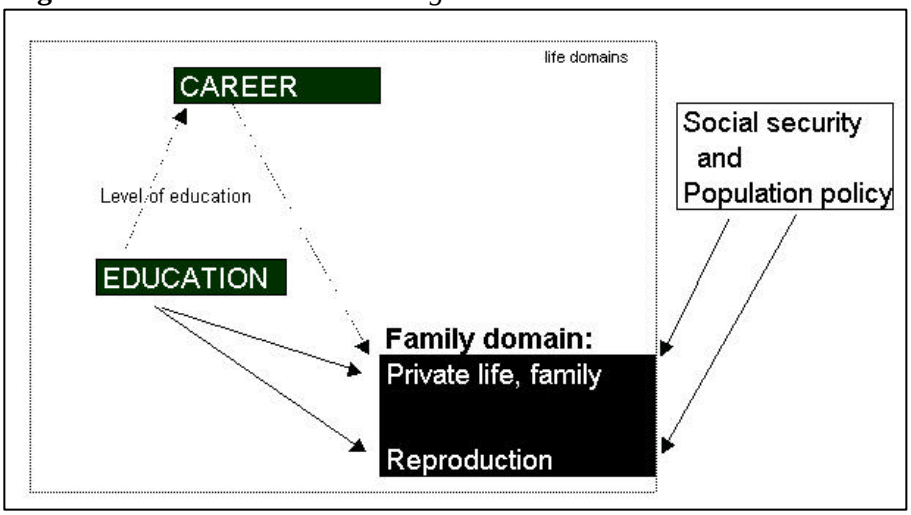
4.1. The concept of the "socialist greenhouse" environment

To interpret the increasing diversity in fertility development in Central and Eastern Europe, the scheme of the "socialist greenhouse", an artificial environment typical for the state socialist societies of Eastern Europe till the end of the 1980s, is developed. The notion of the *socialist greenhouse* explains why Central and Eastern Europe remained relatively unaffected by the substantial changes in fertility in Western European societies in the 1970s and 1980s. The rapid breakdown of this environment that took place over the 1990s had a profound effect on fertility and reproductive behavior of the people living in Eastern Europe.

The scheme of the *socialist greenhouse* in Figure 16 presents a relationship between the life domains of education, career and family, where the *family domain* is further divided into the domain of *private life and family* and the domain of *reproduction*[38]. Separately, the effects of social and population policies are considered. Thin lines are drawn between the domains, where weaker causal relationship could be found, thick lines point out the more important relationships. While the participation in education influenced the family domain, most people completed their education early in life and therefore education usually had not affected their adult lives. The effects of educational level on the career were weak, as other principles –e.g. membership in the Communist party – were more decisive for the job position. The system, in which manual workers were often paid better than a university professor generated "a depreciation of the intristic value of broad education as a requirement for leadership" (Macek et al., 1998, p. 551). The career did not have much influence on the family life and on reproductive decisions. Due to the small differences in income, low pressure for flexibility, non-existing unemployment coupled with a permanent shortage of

[38] This is not to separate reproduction from the family life; this distinction is made to discuss specific factors that facilitated changes in reproductive behavior.

Figure 16: Scheme of the *socialist greenhouse* environment



workforce[39] and generally low-demanding environment, most women (childcare was – and mostly still remains – dominantly a women's task) had resources and time to care about their children.

State population policy and overarching social security were, on the other hand, important in shaping the decisions of people. The system of extensive and egalitarian social care, accompanying people from the cradle to the grave kept the opportunities for young people limited and the price of having children low. Childcare provided by a dense network of crèches, kindergartens and elementary schools was cheap and subsidized, with subsidies including meals and textbooks. Moreover, in many countries women were granted a paid period of maternity leave and families obtained child benefits, which were often progressively increasing with the number of children. The functioning of the *socialist greenhouse* with regard to the specific life domains is briefly described in Table

[39] Carlson (1992) argued that Easterlin's (1968) theory linking the difficulties of large cohorts on the labor market with their successive relative deprivation resulting in lower fertility worked in the opposite direction in Eastern Europe. Large cohorts helped to reduce the shortage of labor and therefore stimulated better performance of economy, which contributed to the temporary increase in the period TFR.

AP-1 in Appendix. Here, I discuss several distinctive features that characterized previous patterns of reproduction during the 1970s and 1980s.

Quantity matters: A system of extensive reproduction

The *socialist greenhouse* was a system of extensive reproduction, where women experienced on average more pregnancies than in other European regions. Slightly higher fertility rates and considerably higher abortion rates[40] may be judged from a broader perspective of the functioning of communist societies, which were developed on the principle of extensive economic growth[41], but were unable to provide high quality or a variety of products. In the domain of human reproduction, the quantity orientation was manifested by the less intensive health care (due to the lack of money and modern technology), by the inability to provide a large choice of comfortable and easily accessible contraception and by the pronatalist orientation often connected with chronic shortages of the labor force. Zakharov (2000, p. 295) pointed out that in the former Soviet Union "the totalitarian State regarded particular growth of human resources, particularly in labor force, as a specific means to escape economic problems as well as a source of continued expansion of military and geopolitical power".

[40] Among women born in 1960, the completed cohort fertility is typically around 2.0 children per woman (e.g. in the Czech Republic – 2.02, Hungary – 2.02 or Estonia – 1.99), with the lowest level in the former GDR (1.78) and highest in Moldova, Poland (2.18), Slovak Republic (2.17) and Romania (2.16 – data from Council of Europe, 2000). This is slightly above the typical level for Western, Southern and Northern Europe, which is around 1.8. However, Eastern European women born around 1960 experienced much higher abortion rates than their Western European counterparts and the total number of pregnancies over their reproductive life was thus over 3 in most countries of Eastern Europe.

[41] The perception of economic success was not based on the principles of income, profit or GDP growth. Economic success was linked to the extensive development, measured in terms of tons of coal and limestone mined, tons of steel and iron produced, and thousands apartments built. The overall emphasis on quantity meant that the quality (and often the real demand) was disregarded.

Uniformity and egalitarianism

Bureaucratic socialism was a highly egalitarian and uniform system that supported conformity among the citizens[42]. Obedience, passivity and hypocrisy were rewarded and often were part of successful life strategies, while distinctness and own initiative were considered to be troublesome. Opportunities were limited, space for alternative lifestyles even more. The state established a strong control over society. Citizens were subjected to a highly centralized system of bureaucratic planning, regulations and top-down decisions. As a result, a relatively high degree of personal security was characteristic for these societies, leading some researchers to put forward views of the functioning of communist societies as a "trade-off" between freedom and security:

"Under the rule of patronage state, freedom of individual choice in all its dimensions was to be permanently and severely curtailed, yet in exchange the less prepossessing aspects of freedom – like individual responsibility for personal survival, success and failure – were to be spared" (Bauman, 1992, p. 163).

Most people followed the same, relatively uniform, pathway of life transitions marked by completed education, first job, marriage connected with the move to own apartment and subsequent childbearing. Only high prevalence of divorce in many countries and relatively high mortality of middle-aged men made living arrangements of people over age 35 more differentiated.

Familism and sexual puritanism

Though the Bolshevik revolution in Russia in 1917 seemed initially to bring about free love and a prospect for the gradual disappearance of traditional family as a typical bourgeois institution (see Geiger, 1968), sexual puritanism and support for

[42] In the article published at the 10th anniversary of the demise of communist regimes in Eastern Europe (The Economist, 6th November 1999, p. 21), the uniformity of communist societies is described in an interesting though little exaggerated way: "from Budapest to Warsaw across ten time zones to Vladivostok, the same monolithic monster prevailed, the same brutal phoney triumphalism, the same glowering statue of Lenin on his pedestal in thousand upon thousand town squares (…) the greyness (…) the hostility to religion; the tyranny of one ideology, the totalitarian control of a single party in the grip of a privileged few"

traditional families were characteristic for the final decades of Eastern European authoritative regimes. Lack of information regarding sex and contraception, lack of sex education and shying about words "sex" and "sexual" created an environment, in which "ignorance regarding sex and reproduction was widespread among lay people and, paradoxically even among media workers" (Stloukal, 1996, p. 8). Official Communist morality pursued the idea of parental "duty" or responsibility of women to society to bear children. The position of women was often characterized by inconsistent combination of egalitarian ideology, quasi-egalitarian practice and traditional stereotypes (Zdravomyslova and Temkina, 1997, quoted in Zhurzhenko, 2001, p. 37). Official support for families, leading even to the "idolization of family", developed in some instances to a "morality" similar to the most orthodox Catholic morality (Ferge, 1997, p. 164).

The function of family

Despite widespread secularization and tolerant attitudes toward abortion, divorce and non-marital sex, caring about family and children or "happy family life" were one of the most strongly emphasized life goals among people in Central and Eastern Europe. Very few women, typically less than 10 %, remained never married. Family life had different functions and was fulfilling different needs than in Western societies. In a system of bureaucratic housing distribution, starting a family was for young people the easiest option to obtain an apartment and leave the parental home; paradoxically marriage and childbearing formed the early road to independence (van de Kaa, 1993) [43]. State subsidies in the form of loans for the newlyweds, youth saving schemes and family allowances further strengthened the attractiveness of marriage, suggesting that the only possible obstacle to family life – money – is easily solved (Rabušic, 1990). Moreover, family provided space for individual fulfillment and self-realization. Many people lived a dual life, with a sharp divide between public and private behavior and morality (Macek et al., 1998, p. 550). It was only within the small circle of family and friends that people felt free to talk and express themselves openly. Family ties and mutual help of family members were also important for providing informal services and

[43] The situation in Russia was described by Avdeev and Monnier (1995, p. 7) in the following way: "housing shortage paradoxically resulted in earlier marriage and parenthood: it was necessary to waste no time in starting a family, to stand a chance of having one's own home by the age of 30".

substituting thus the underdeveloped service economy. Widespread familistic behavior in Eastern Europe can be seen as a specific reaction to the outside environment, an "escape into the family".

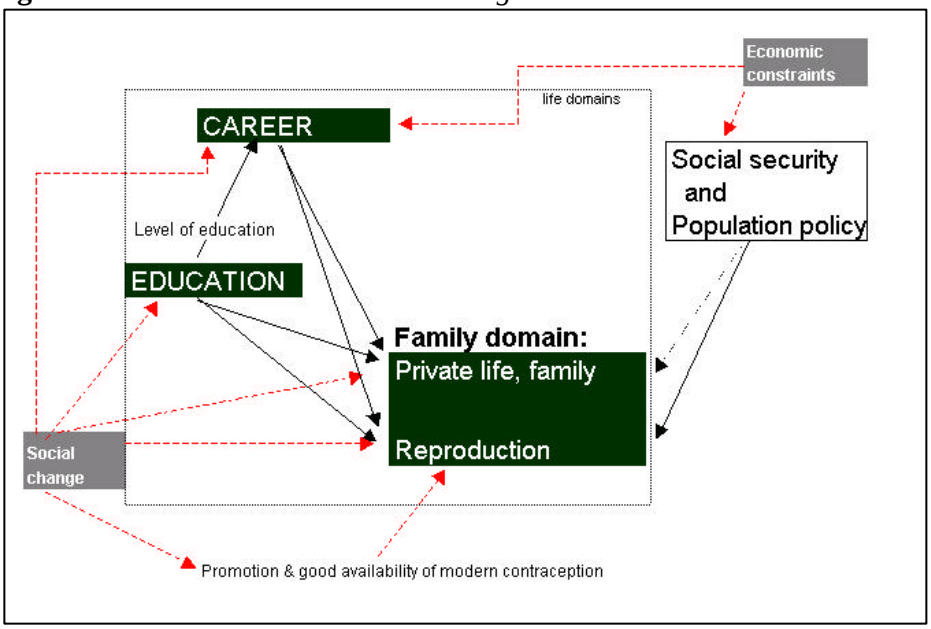
4.2. Dissolution of the socialist greenhouse: Why so fast?

The scheme of the dissolution of the *socialist greenhouse* (Figure 17 and Table AP-2) considers separately the influence of two broad groups of factors, *economic constraints* and *social change*. *Economic constraints* refer to the economic crisis, declining or insufficient support provided by the social security network, deteriorating position of families with children as well as formerly inexperienced phenomena of unemployment, sharp income disparities and poverty. *Social change* is an extensive category pertaining to recent social and cultural changes, including "Westernization", new opportunities, influences of market economy, changes in values and attitudes and changes in the organization of labor.

Although the terminology distinguishing *social change* from *economic factors* frequently differs, the influence of these two broad categories is often discussed in the papers analyzing recent fertility changes in European post-communist countries. There is no common agreement among demographers how important was the influence of each of these two factors on women's reproductive decisions. There is also a discussion on the causality and the direction of changes induced by either *economic constraints* or by *social change* and on the regional differentiation of the influences of these two factors. With some simplification, *social change* is expected to bring about a broad transformation of demographic behavior comparable with earlier changes in Western Europe, while the *economic constraints* are often thought to depress fertility levels but to preserve the distinctiveness of previous fertility patterns.

In Figure 17, *social change* affects directly the domains of career, education and *private and family life*, while it further affects the domain of *reproduction* through the dissemination of modern contraception. *Economic constraints* affect especially social security and population policy and the domain of career. In turn, social policy affects the *family domain*. Some relationships, which were weak in the *socialist greenhouse*, gain in importance. Educational level is increasingly

Figure 17: The dissolution of the *socialist greenhouse*



important for the domain of career, especially for employment prospects, career position and salary. The effects of "being in education", strong in the *socialist greenhouse*, are more important due to an increasing proportion of young people involved in secondary, post-secondary and especially university education. The career has a growing impact on the private life, family and reproductive decisions. Thread of unemployment combined with the pressure for higher efficiency, flexibility and work commitment interfere with the childbearing plans, family life and leisure activities. *Social change* has an independent effect on private and family life: new opportunities and the diffusion of "Western" lifestyles decrease the attractiveness of traditional pathways marked by the early and almost universal transitions to marriage and childbearing. *Economic constraints*, more specifically the move toward market economy and governments' inability to finance extensive social policies, further affect family life and reproductive decisions. State system of housing distribution is abandoned, support for families with children reduced or income-tested. Establishing a family may be both

economically disadvantageous and socially unattractive[44], having children may be expensive (most subsidies abandoned), time-consuming (increasing *opportunity costs*) and even undesirable due to the competing new opportunities and value change towards individual lifestyles.

A rapid dissolution of the *socialist greenhouse* may be linked to the similarly rapid collapse of the totalitarian political systems. Social change associated with new opportunities, consumer choice and "unaccustomed freedom" (Scheich et al., 2000, p. 141) as well as with the new constraints started to affect people almost immediately. Sudden decline in period fertility was a result of a simultaneous influence of *social change* and *economic constraints*. Moreover, there were latent conditions favorable for rapid fertility changes present in many state-socialist countries before 1989, namely high secularization, rational and pragmatic orientation and quite positive attitudes toward non-marital births or cohabitation. These conditions further speeded-up fertility transformation over the 1990s.

4.3. Economic constraints

The scheme of the dissolution of the *socialist greenhouse* distinguished the influences of *social change* and *economic constraints* on various life domains. Which factors were most important in inducing fertility changes? To prevent an extensive discussion on a long "shopping list" of all relevant factors (see also Table AP-2), the paper focuses selectively on the most important ones.

Many demographers emphasized the influence of economic factors in Eastern European fertility changes[45]. A paper published by the United Nations (UN ECE,

[44] As the social policies do not provide incentives for establishing a family (through housing distribution, special loans or taxes), their influence on private and family life – strong in the era of the *socialist greenhouse* – is assumed to be weak.

[45] Ellman (2000) provides a detailed overview of the "social costs of transformation" in Eastern Europe. Apart from the factors discussed here, he pays attention to the deterioration or collapse of public services in many (especially the Post-soviet) countries, to the growth of corruption and crime and particularly to the spread of poverty and income disparities. Moreover, various groups of population were unequally affected by these negative phenomena. A comprehensive account on the changing lives of women was published by UNICEF (1999).

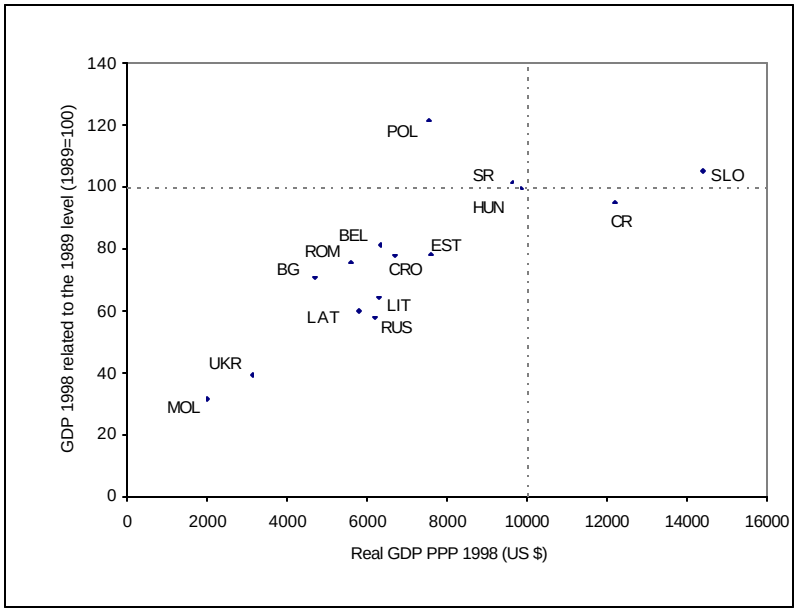
2000 (1)) stressed the spread of poverty, decline in living standards of families and generally "the social and economic crisis of the 1990s", which "was a major driving force behind the fertility decline" (p. 190). Authors referring to the situation in individual countries often argued in a similar way. Rychtaríková (2000, p. 101) concluded that in the Czech Republic, "all symptoms seem to indicate crisis behavior more than intentional choice" and emphasized family income deterioration, rising criminality and corruption and "increased general feeling of insecurity and distress". Economic deterioration and broad social crisis are most often stressed in connection with the situation in the Post-Soviet Republics. Steshenko (2000, p. 355), commenting on the social tension and widespread feeling of hopelessness in Ukraine, proposed that "desire to be parent and to have children in a current crisis situation competes with the need of survival".

Economic crisis

Which countries have faced severe economic crisis and which have undergone relatively smooth transition toward market economy? How to assess the importance of economic deprivation people face in different countries? Figure 18 shows the position of different countries with respect to the absolute level of GDP in 1998 (US Dollars in purchasing power parity) and real GDP change between 1989 and 1999.

The differences between countries are striking. Most countries with low GDP level in 1998 had previously experienced strong economic decline, while countries with relatively high GDP in 1998 had experienced a modest decline or even some economic growth during the previous decade. The figure helps to distinguish countries that have seen a relatively smooth transition to market economy; especially Central European countries (except Croatia) had fairly high GDP level and experienced either economic growth or only a minor decline over the 1989-1999 period. Moldova and Ukraine, trapped in a severe economic crisis marked by a dramatic and longstanding decline in the GDP, contrast with these relatively successful countries. Other countries occupy an intermediate position; however most of them have seen quite a steady economic decline. This picture provides only a basic orientation in the economic landscape of the post-communist countries. However, decline in the human development index,

Figure 18: GDP in purchasing power parity in US Dollars in 1998 and real GDP change 1989-98



Sources: UN HDR (2000), UN ECE (2000(2))

inflation rate, degree of poverty and the expenditures spent on food are closely related with the intensity of economic deterioration between 1989 and 1999 (see Table AP-4). Similarly, Inglehart and Baker (2000, p. 41) distinguish between countries that experienced economic and societal collapse and countries that made a successful transition to market economy. All the Post-Soviet states belong to the first category, characterized by an increasing emphasis on survival values, "growing misery, distrust, rejection of outgroups, xenophobia and authoritative nationalism". It is plausible that in the countries that faced profound economic crisis coupled with the collapse of previous social and economic structures, fertility change was dominantly influenced by the *economic constraints.*

To what degree have the new *economic constraints* affected the more successful countries? Besides the often-suggested effects of the deterioration of state support

for the families with children, two broad factors are important: relative deprivation and work-related issues.

Relative deprivation, uncertainty and risk aversion

Several researchers have proposed that in Eastern Europe not so much the real deprivation but relative deprivation related either to the Western living standards and consumer aspirations (Lesthaeghe, 2000, p. 10) or to the evaluation of own income and personal expectations (Philipov, 2002, p. 12) was more important for fertility decisions. Furthermore, the profound and dramatic societal changes lead to the widespread feelings of uncertainty and "fear of the future". People facing an uncertain future may postpone or forego major life commitments associated with future costs and benefits that are uncertain[46]. However, as the low level of economic development at the end of the 1990s corresponds with the intensive decline in GDP and living standards over the previous decade, the relative deprivation should be stronger in countries which have seen an upsurge of poverty and income disparities. Similarly, the effects of discontinuity, disorderliness and above all uncertainty and fear of the future[47] have played a more important role in societies experiencing deep crisis.

[46] McDonald (2001, p. 5) refers to the "risk theory" and emphasizes that the decision to have a child is a decision to change the future life course and it depends upon the future orientation of the people making decisions: "If there is a perception that economic, social, intimate or personal futures are uncertain, decision makers may err on the side of safety in order to avert risk or they may pursue an opportunity that is within their reach". A different perspective is taken by the "theory of the value of children" proposed by Friedman et al. (1994). In their view, marriage and childbearing are "global strategies" available to reduce uncertainty regarding future, pursued especially among women, whose "alternative pathways for reducing uncertainty are limited or blocked" (p. 383). Thus, we could expect an increase in childbearing and marriage rates among women, whose living conditions have considerably deteriorated. Generally, the evidence does not provide support for this reasoning. Although this theory may shed some light on current differences in fertility among teenage women (higher in economically less successful countries), these are more likely results of a slower change in previous fertility patterns than of the uncertainty reduction strategies.

[47] For an interesting discussion on discontinuity, disorderliness, social anomie and uncertainty, see Philipov (2002, p. 15-19).

Employment, unemployment and gender issues

Access to employment and easy combination of career and childcare is one of the critical issues for the future fertility development in the region. During the communist era most women, typically over 90 % in the productive age, participated in the labor force. Since the inefficient economy was facing a permanent shortage of available labor force, employment of women was officially promoted. In addition, salaries were low and most women had to work in order to ensure basic living standards of their families. Some women perceived this situation as a "double slavery" of the traditional role of wife and mother and a new role of the member of labor force (e.g. Panova et al. 1993, p. 17).

Although most countries experienced considerably steeper decline in the labor force participation among women than among men over the 1990s (UN EE 2000 (1), p. 196), women still accounted for 43-49 % of the labor force in 1998 (Table AP-5)). While some women may prefer to stay outside the labor market[48], large majority will pursue their labor participation to experience self-realization, to make use of their education and above all to support themselves financially. It is highly unlikely that once women gained economic autonomy (and hence also increased personal freedom) by the participation in the paid labor, many of them would seek to become housewives.

High unemployment rates and poor employment prospects, pronounced among young and less educated people, have impact on the decisions concerning long-term commitments. At the end of the 1990s, high unemployment was registered in some Central European countries (unemployment rate exceeding 15 % was recorded in Croatia, Slovak Republic and former GDR) and in Bulgaria. In the Post-Soviet countries, unemployment is frequently hidden; many people are officially employed or on a "temporary leave" in bankrupt firms without obtaining a salary[49]. In most countries with available data, unemployment rates of

[48] Stankuniene (2000, p. 211) proposed that in Lithuania, "a new social group of housewives, that did not and could not exist in the Soviet period of full employment, is being formed".

[49] According to the ILO enterprise survey of Ukrainian industry (1999), quoted by Nesporova (2000, p. 143), over 20 % of workers were on short-time work and 18 % on administrative leave. Women were forced to take extended maternity leave: "As a result, at any time, about one third of all employees were actually laid-off although formally employed".

women do not considerably exceed unemployment rates of men[50]. Unemployment among young people (15 to 24) reached highest proportions, over 25 % in Bulgaria (36 %), Croatia and Latvia.

Although the weaker position of women on the labor market is not mirrored by the data on unemployment rates, there are still many threats for the employment prospects of women. Traditionally, women get lower salary than men, even if they have the same level of education and comparable professional position (see Table AP-5 for gender pay ratios). These disparities may lead to the "feminization of poverty" with a more than proportional share of women living below the poverty level (UN EE, 1999, p. 194). Economic crisis shifts attention from the political emancipation of women; gender competition on the labor market disfavors female applicants and reduces their promotion chances (Lesthaeghe, 1995, p. 52). Economic recovery may later result in a reduction in male unemployment with female unemployment remaining high (UN EE, 1999). The position of women with young children is especially fragile [51].

Reconciliation of work and motherhood is difficult in all "transitional societies". Since the private firms emphasize flexibility, reliability and work commitment, a possibility of future pregnancy complicates the labor prospects of young childless women. The legal protection of women against labor discrimination is weak, opportunities for part-time work are scarce and insufficient. This situation is sharpened in traditional societies that underwent serious economic crisis. Zhurzhenko (2001, p. 35) found marginalization of the position of women to be one of the most obvious consequences of the market transition in Ukraine.

[50] In 1998, relatively higher unemployment rate of women (by at least 10 % higher than the unemployment rate of men) was in Croatia (+10 %), in Poland (+16 %) and in the Czech Republic (+26 %). In Hungary and Estonia, unemployment of women was by 10 % lower than that of men.

[51] There are not many data available on unemployment rates among women with children. Labor market conditions seem to be tough for mothers with young children in East Germany: In April 1998, 27.3 % married women and 38.9 % single mothers with children aged 3 to 6 years were unemployed (Grünheid and Roloff, 2000 , p. 87).

4.4. Social change

Simultaneous changes in fertility level, timing and "setting" (marriage vs. cohabitation vs. single motherhood) accompanied by the changes in reproductive behavior suggest that the influence of social and cultural changes on fertility behavior was at least equally important to the *economic constraints.* Ron Lesthaeghe's comment (1983) on fertility changes in Western Europe quoted in Introduction is fully valid in case of Eastern European societies: fertility and family changes have the appearance of a fundamental transition there. Most trends, such as increase in the proportion of non-marital births, postponement of childbearing, increase in childlessness, spread of cohabitation or destandardization of the life course are characteristic features of the "second demographic transition" (see Lesthaeghe, 1995 and van de Kaa, 1993). Many authors stress the prominent importance of social changes for recent fertility transition. Rabušic (1997, p. 114) considers "creation of democratic space for freedom of individual choice and lifestyle" to be the most important factor of recent demographic changes in the Czech Republic. Philipov (2002, p. 11) suggests that the reasoning connecting fertility decline with economic hardship has received surprisingly little scientific support. Even in the case of countries facing severe economic crisis, there is an evidence of a broad social transformation. Zakharov (2000, p. 308) refuses the notion of "fertility crisis" in Russia. In his view, only "the crisis in the previous timing pattern is of real sense". Philipov (2000, p. 71) observed that in Bulgaria, people who do not experience economic difficulties also postpone marriage and births. Furthermore, in the countries where economic recovery has started, period fertility has continued to decline (UN ECE, 1999, p. 191)[52]. From a large number of factors influencing women's decisions, I pay attention to the educational expansion, to the broader influence of consumer society characterized by choice and opportunities and to the impact of delayed expansion of modern contraception.

[52] Schmid (1989, p. 10-11) called this situation "welfare paradox". He proposes that "with signs of hope people become aware of the increasing societal wealth and they try to maximize their share of these resources by promoting their personal career. A fear of possible loss of status and opportunities is connected with this new outlook".

Delayed sexual and contraceptive revolution

Though Eastern European countries are highly differentiated with respect to the contraceptive practice, sexual behavior and sexual morality, delayed "contraceptive revolution" as well as "sexual revolution" have taken place in most of them over the 1990s. The decline in abortion rates occurred hand in hand with the fall in fertility rates and a rise in the use of modern contraception. Mastery of contraception has been replacing the old "norms" of unprotected sex followed by an early marriage and subsequent childbearing. A rather open and liberal approach towards sexuality paved the way to the introduction of sex education and to the boom of news regarding contraception and sexual behavior. Media that were careful during the communist era to discuss sex and reproduction have competed in spreading messages on sexuality, pornography, and contraception. Women's journals promoting "lifestyle sex" (Hawkes, 1999), special sections in magazines for teenagers, TV shows with well-known sexologists, easily accessible pornography and books on *Kamasutra* all contributed to the rapidly increasing knowledge and awareness about sex and contraception, particularly among young men and women. Increasing use of contraceptives reduced the number of unwanted pregnancies and consequently also of unplanned and "mistimed" births. Apart from this direct contribution to the fertility decline, the spread of modern contraception is associated with the broad behavioral changes leading to the "second demographic transition". According to van de Kaa (1993, p. 113), the "mastery of contraception and the freedom of the fear of pregnancy have had a direct impact on the norms governing sexual and reproductive behavior and, consequently, on demographic trends".

Expansion of higher education

Expansion of secondary grammar schools and university education is one of the most significant effects of social changes in the 1990s. In the era of the *socialist greenhouse*, between 10 and 15 % of young people were enrolled at the university[53]. Apprenticeship or practical training followed by an early employment constituted a typical choice for a large part of young people living in

[53] Data from the TransMONEE 2000 database based on the CIS official statistics (Table AP-6) indicate that in the former USSR this proportion was higher, up to 25 %.

the system, where, by definition, workers formed the ruling class. In 1998, the proportion of young people studying at age 20-24 was between 16 % (Romania) and 31 % (Poland)[54], i.e. roughly two times higher than at the end of the 1980s. In most countries, considerably more women than men are studying at the university[55]. In addition, thousands of applicants in some countries (e.g. in the Czech Republic) are not admitted to the university due to the lack of funding, rooms and qualified teachers.

The expansion of education influences the long-term fertility changes for several reasons. In the first place, the status of "being in education" is not compatible with childcare and family life. Young students usually lack time and resources (housing and money) to have children. Start of childbearing is clearly linked to educational attainment (Schoenmaeckers and Lodewijckx, 1999, p. 230). As a result, an increasing proportion of women who study after age 20 may partly account for the recent trends toward the postponement of first births.

Equally important are prevailing fertility differences by educational level. Women with university diploma are putting more emphasis on career and non-family interests and have on average fewer children than the less educated women. Since the educational level has been increasingly linked to the job position, income and career prospects, the *opportunity costs* of childbearing among the more educated women are considerably higher as well. In addition, prolongation of education and democratization of access to high education have an independent effect for spreading values favoring individual freedom and gender equality (Lesthaeghe, 2000, p. 19). While the importance of traditional values and traditional morality usually decreases with the level of education, high education is a strong correlate of permissiveness in personal matters such as abortion and homosexuality, independence, individuation, postmaterialism or sexual freedom (Lesthaeghe, 1988, p. 15 and 18). In the post-communist countries, university students and

[54] Data on the number of students by age group and sex are not available for the Post-soviet republics. According to different data from the TransMONEE 2000 database, the enrollment in the university education in the four post-soviet Republics has increased by about 5 % (table AP-6).

[55] The female/male education participation ratio is by 40 to 50 % higher in Slovenia, Bulgaria, Latvia and Lithuania; in total up to one third of women (Slovenia and Poland) were studying at age 20-24 (see Table AP-6).

fresh graduates are often the pioneers of "libertarian culture" and of the new forms of behavior, such as cohabitation or living-apart-together relationship.

Choice and opportunities: Coming of consumer society

Bauman (1992) considers the inability of communist regimes to provide consumer choice to be one of the major reasons for their collapse[56]. In Western societies, choice has become the criterion of good life and personal success: "choice of the kind of person one would like to become, choice of pleasures one would like to enjoy, choice of the very needs one would like to seek, adopt and gratify" (p. 169). Consumer values had spread considerably before 1990, nevertheless the channels to satisfy them were limited (few opportunities for a significant increase in income, small choice over a limited number of consumer goods, hardly accessible black market, few possibilities to travel abroad) and were not competing with the family life. In fact, consumerism was "interconnected with "familism", as many people evaluated their standard of living in terms of family welfare" (Stloukal, 1996, p. 10).

Since 1990, once omnipresent posters celebrating the "achievements" of socialism quickly gave way to billboards with images of young, nice and happy people enjoying powerful cars, exotic holidays and new mobile phones. For many young people, the new world of freedom and choice – to study, to switch jobs, to travel, to consume – is still intoxicating. The old standards of behavior are disappearing and are being replaced by individualistic lifestyles in which "people make their own choices about marriage or cohabitation, where they are free to have children in or outside marriage, to have them alone or with a partner, and where they can have them early or late in life" (van de Kaa, 1999, p. 31). The meaning of sex is transformed thanks to easily available contraception. Contraception is only interrupted to have a "self-fulfilling conception" (van de Kaa, 1999) and bearing and rearing children becomes just one of the possible lifestyles – an expression of one's chosen identity (Kuijsten, 1996, p. 122).

[56] "It is precisely choice that communism, this dictatorship over needs, could not and would not ever provide" (p. 169)…"it was the postmodern, narcissistic culture of self-enhancement, self-enjoyment, instant gratification and life defined in terms of consumer styles that finally exposed the obsoleteness of the "steal per head" philosophy stubbornly preached and practised under communism" (p. 171).

New adoration of the consumption[57] (Lesthaeghe, 1995, p. 27), achievement ideology and a climate of competition (Hoffmann-Nowotny, 1988) lead to the postponement of childbearing as a major life commitment. Either due to the self-centered enjoyment or due to the "quest for perfectionism" (Lesthaeghe and Surkyn, 1988, p. 38), or due to more responsible attitudes to childbearing, "wait and see" approach has become widespread. In embracing consumer values, alternative lifestyles and new opportunities, young generations may not only prove to be flexible and pragmatic under the new social conditions; they may also distance themselves from the "boring" and uniform life histories of their parents. Contemporary consumer culture still has a lot of space to conquer as in many countries the "largest proportion of population is left outside the consumer paradise" (Zhurzhenko, 2001, p. 43).

4.5. Two pathways of transition

Differences in the intensity of *economic constraints* and unequal diffusion of new opportunities and *social change* in general contributed to the recent differentiation in fertility development across Eastern Europe. Correlation coefficients presented in Table 5 provide tentative evidence of the mutual interrelation between fertility, social, economic, cultural and technological change utilizing data from diverse sources, including the 1999 European Values Study survey (Halman, 2001).

The table presents two sets of strongly interrelated indicators referring either to the situation in 1998-1999 or to the change over the 1990s. The first set of indicators pertains to the postponement of childbearing in 1989-1999. The correlation coefficients with the change in the mean age of women at childbirth and at first birth are shown, each of them bearing a slightly different interpretation. The delay of childbearing is best captured by the increase in the

[57] Easterlin and Crimmins (1985, p. 24) establish a direct link between the introduction of new goods and decline in fertility: "The enjoyment of new goods tends to require life-styles other than those centering on children, since new goods are typically substitutes for, rather than complementary with, children. At any given level of income, households would tend to shift expenditure toward new purposes and away from old goods, including in the latter, having and raising children". In all Eastern European countries, large number of consumer goods became suddenly available since the marketization of their economies at the beginning of the 1990s.

age of mothers having first child. Since this indicator is not available for three regions (former GDR, Moldova and Ukraine), mean age at childbearing represents a more complete evidence, but it is also additionally influenced by the shifts in the parity composition of childbearing. The second set of indicators presents correlation with fertility rates among teenage women in 1999.

The correlation table indicates that two types of fertility transition were taking place among the post-communist countries since 1989. Change in the fertility timing, namely the speed of the postponement of childbearing, appears to be the major differentiating factor in the East European fertility transition. Interestingly, the pace of the postponement is strongly connected with successful economic and social development. Successful economic transformation (measured by the GDP level, GDP change, inflation rate and index of economic transformation), quality of institutions, fast technological change (captured by the improvement in the life expectancy of men) and higher level of subjective well-being stimulated faster departure from the previous patterns of early childbearing. This evidence is in line with the theoretical reasoning on the impact of social and economic factors on fertility, discussed in the preceding sections of the paper. Countries that experienced strong break-up of the previous system of state-controlled economy and society and a fairly smooth transition to democracy and capitalist economy also experienced strong collapse of the previous fertility patterns and fast shift towards the late-fertility patterns typical of countries in Western Europe. A strong macro-level correlation of the speed of the postponement of first births with current life satisfaction (0.84) and with the perception of freedom of choice and control people feel over their life (0.75) is particularly interesting. It provides support for the idea that the increasing choice and opportunities, typical of democratic and consumer societies, contributed to the speed of transition from the early to the late-fertility regime. Rapid postponement of births was further connected with strong delays of marriages and intensive reduction in the first-parity TFR due to the *timing effects.*

High childbearing rates among teenage women in 1999 characterize the countries experiencing slower shifts in fertility timing and more 'crisis-driven' fertility change. High fertility rates of women below age 20 in 1999 were related to the deterioration in economy and living standards over the 1990s, low economic level in 1998-99, decline in the life expectancy among men in 1989-1998, slow spread

Table 5: Correlation coefficients of indicators related to the postponement of childbearing in 1989-1999 and to fertility rates of women below age 20 in 1999 (15 countries of Central and Eastern Europe)

	Mean age at childbirth 1989-1999	Mean age first child 1989-1999	Fertility teenage F 1999
Economic change, living standards			
% of household budget spent on food, tobacco and alcohol, 1998	-0.85*** (12)	-0.72** (12)	0.82** (12)
GDP 1998 (PPP, US $)	0.84*** (15)	0.84*** (13)	-0.82*** (15)
HDI 1998	0.83*** (15)	0.77** (13)	-0.85*** (15)
Change in the HDI 1990-98	0.77** (15)	0.69** (13)	-0.71** (15)
Index of economic transformation, 1998 1)	-0.70** (15)	-0.61* (13)	0.61* (15)
Real GDP change 1989-98	0.68** (15)	..	-0.71** (15)
Average inflation rate, 1990-99	-0.64* (15)	-0.64* (13)	..
Economic structure			
% of workforce working in agriculture, 1998	-0.68** (15)	..	0.72** (15)
Institutions			
Index of institutional quality, 1997-98 6)	0.79*** (15)	0.75** (13)	-0.65** (15)
Technology			
Change in the life expectancy of men (1989-98)	0.83*** (15)	0.81*** (13)	-0.62* (14)
Internet connections, 1999	0.57* (15)	..	-0.59* (15)
Spread of mobile phones, 1999	..	..	-0.59* (15)
Subjective well-being			
Current life satisfaction (EVS, 1999) 2)	0.89*** (14)	0.84*** (13)	-0.78*** (14)
Freedom of choice and control over one's life (EVS, 1999) 3)	0.70** (14)	0.75** (13)	-0.55* (14)
Gender attitudes, traditionalism			
A woman has to have children (EVS, 1999) 4)	-0.65* (14)	..	0.58* (14)
Men priority getting job (EVS, 1999) 5)			0.71** (14)
Fertility and family indicators			
Change in the mean age of women at first marriage, 1989-1999	0.82** (12)	0.86*** (12)	..
Fertility of women below age 20, 1999	-0.82*** (15)	-0.65* (13)	x
TFR1, 1998	-0.81** (11)	-0.66 * (10)	0.63* (11)
Induced abortion rate, 1999 (or most recent)	-0.77** (12)	-0.69* (12)	..

Pearson's correlation coefficients, bivariate correlation. For lack of data, Eastern Germany was not included in the analysis.

Number of cases is indicated in parenthesis. Insignificant coefficients are not shown.

EVS - European Values Study, round 1999, HDI – Human Development Index, PPP – Purchasing power parity

Notes: 1) Higher score = less successful development (source: Karatnycky et al., 1999)

2) "All things considered, how satisfied are you with your life as a whole these days?"
Mean country score on the 1 to 10 scale (1= dissatisfied, 10 = satisfied)

3) "Please use the scale to indicate how much freedom of choice and control you feel over the way your life turns out?" Mean country score on the 1 to 10 scale (1= none at all, 10 = a grat deal)

4) Proportion of respondents who agree with the statement "Do you think that a woman has to have children in order to be fulfilled or is this not necessary?"

5) Proportion of respondents agreeing with the statement "When jobs are scarce, men have more right to a job than women"

6) Index based on the following components: extent of democracy, government effectiveness, extent of regulation, rule of law and extent of corruption (Source: UN ECE, 2001)

Significance: * <0.05, **<0.01, ***<0.001

Sources of data: Council of Europe (2000), EUROSTAT (2001, 2002) , FV (2000), Halman (2001), Karatnycky et al. (1999), UN ECE (2000(2), 2001), UN HDR (2000). Sources of demographic data are listed below the Table 2.

of modern technologies (measured by the number of Internet connections and mobile phones) and low level of life satisfaction. People living in these countries have to spend most of their incomes for food and a relatively large proportion of inhabitants is employed in agriculture. Furthermore, high teenage fertility rates are associated with the low quality of institutions and more traditional gender and family attitudes, characterized by the view that men should get priority obtaining job if jobs are scarce and women need children to be fulfilled (see Table 5).

High fertility rates of teenage women reveal a slower deconstruction of the *socialist greenhouse* environment in countries experiencing social and economic crisis. In these societies, fertility change was dominantly a reaction to the severe deterioration of the living standards during the long period of economic and social hardship and the decline in period fertility was only weakly attributed to the postponement. Modern contraception has been only slowly reducing the high dependence of women on abortion and many women still have children at a very young age. New choices and opportunities are limited, and people feel little control over their lives. While the first-parity fertility remains relatively higher, many women opt to have only one child.

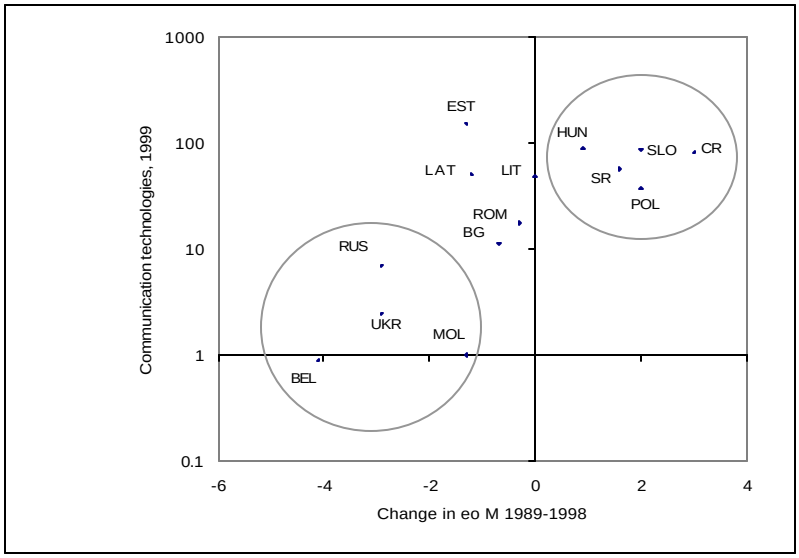
Figure 19 presents an attempt to differentiate various post-communist countries according to the technological advancement in the 1990s. The spread of communication technologies in 1999[58] is shown alongside with the change in the life expectancy of men between 1989 and 1998[59]. Improvements in the life expectancy indicate a relatively stable social environment as well as technological advancement in health care. Decline in the life expectancy points to technological backwardness, lack of money in the health care system, a problematic social situation and the deterioration in living standards.

Central European countries are the "winners" in the process of technological innovation among the post-communist societies. In the Czech Republic, Hungary, Poland, Slovenia and Slovak Republic, improvements in the life expectancy of men as well as the diffusion of communication technologies (still small judged by

[58] Index combining number of mobile phones per 1.000 inhabitants and Internet connections per 10.000 inhabitants in 1999 (both indicators were divided by 2).

[59] Decline in the life expectancy of men has been more intensive than that of women in the countries undergoing serious economic crisis.

Figure 19: Spread of communication technologies in 1999 and change in the life expectancy of men in 1989-1998



Sources: Council of Europe (2000), UN ECE (2000(2)), EUROSTAT (2001)

Western European standards) took place. Four Post-Soviet republics are clustered near the opposite side of the graph: there, modern technologies have hardly made any inroads and life expectancy of men decreased by 1 to 4 years. Baltic states and South-Eastern Europe (Bulgaria, Romania) show an intermediate position, with a slight decline of life expectancy and various levels of the spread of communication technologies – higher in Baltic states (especially in Estonia), lower in South-Eastern Europe. To a large degree, this differentiation closely resembles the division of countries according to the level of GDP and GDP change in 1989-1999 (Figure 18). Furthermore, figures charting the position of these countries according to the quality of institutions (data in Table AP-4), life satisfaction and people's perception of freedom and control over their lives would also provide similar picture.

Two contrasting pathways of fertility change outlined by the correlation analysis correspond with the two opposite clusters of countries in charts illustrating

economic change and *technological change* (Figure 18 and 19). In the more successful countries, particularly in Central Europe (with the exception of Croatia), fertility change was primarily associated with the broad social changes and was marked by an intensive postponement of first birth. In the least successful countries, especially in the four Post-soviet republics (Belarus, Moldova, Russian Federation, Ukraine), a deep crisis has been the major initial factor in the fertility decline and many features of the *socialist greenhouse* (e.g. high abortion rates or teenage fertility rates) are still present.

4.6. Religion, cultural tradition and value change

The above sketched picture would remain too simplistic if we would not consider the effects of religious tradition, degree of secularization and the imprints of the Communist mentality that form a colorful cultural mixture of Eastern Europe. Till the 1940s, Central and Eastern Europe was culturally and economically very heterogeneous. Four decades of shared experience with the state-bureaucratic system, imposing the same institutions and ideology, led to the diminishing cultural and socio-economic differences across the region. The 1990s brought the re-emergence of diversity, manifested also in demographic trends.

In several countries, the influence of religious teachings and related behavioral norms remains strong. The Roman Catholic Church has considerable influence in Poland, Lithuania, in the Slovak Republic and in Croatia, while the Christian Orthodox religion has a strong influence in Moldova, in rural parts of Ukraine and in some regions of Romania (Moldavia, rural Transylvania). Several charts presented in this paper suggested that religious tradition played an important role in shaping recent fertility changes. First, it appears that more religious countries generally faced more gradual decline in period fertility, less intensive postponement of births, and above all, slow increase in non-marital childbearing, slow diffusion of cohabitation and slow spread of modern contraception, especially the pill. Countries with a strong Protestant tradition constitute a favorable environment for the diffusion of consensual unions and non-marital births, while Catholic secularized countries are facing rapid expansion of the pill and an intensive postponement of first births. In the more religious Catholic countries, cohabitation is spreading very slowly, most women prefer to bear

children within marriage and majority of non-marital births occurs to lone mothers.

Especially the Catholic Church is known for its emphasis on "traditional family values" and frequent interventions into the domain of human reproduction, trying to influence sex morality, sex education, family planning and abortion laws. In Lithuania, the Catholic Church has curbed the introduction of the family planning education (Karro, 1997, p. 15). In Poland, the Church was the main active force promoting the ban on abortions established in 1993, it opposed the spread of modern contraceptives and made obstructions to the introduction of sex education (David and Titkow, 1994). Lesthaeghe and Surkyn (1988, p. 13) see the secularization dimension to be the main factor of ideational changes: "Secularization, in its institutional sense, is a *conditio sine qua non* for pluralism and tolerance". In Europe, Protestantism was more conductive for the progression towards libertarian culture than the Catholic or Orthodox tradition (Lesthaeghe and Moors 2000, p. 155). These findings may partly explain rapid spread of non-marital births and cohabitation in the three secularized and traditionally mostly Protestant societies. The influence of Orthodox Christianity is more difficult to establish; Orthodox religion is not fiercely opposed to abortion or contraception, but it may put emphasis on traditional family values or on the authority of the state, especially in the more rural societies of Eastern Europe, such as Moldova. On the basis of limited evidence, it appears that the relatively intensive increase in the proportion of non-marital births in the Christian Orthodox countries is not compensated by cohabitation and most non-marital children are born to single mothers. It is difficult to judge whether this is an effect of the cultural-religious tradition or of economic hardship, lack of men's commitment and difficult housing situation[60].

[60] Paradoxically, higher degree of religiosity or traditionalism may negatively influence fertility in the future. McDonald (2000) argued that in Western societies, individual-oriented institutions (such as democracy, education or paid employment), once dominated by men, have gradually progressed toward gender equity, which enabled women to pursue high education or to compete on the labor market. At the same time, the progress toward gender equity within family has been advancing slowly, establishing dilemma for many women if "they perceive a potential future family role as inconsistent with their aspirations as individuals" (p. 437). Persistent influence of religion (or traditionalism), supporting "idealized family morality" may protect family organization from radical change toward higher gender equity. As a result, many women hesitate to establish a family and fertility falls to a very low level. Currently, this theory provides one of the plausible explanations of

Despite the persistent influence of the old cultural and religious tradition, Eastern Europe was subjected to many decades of the official promotion of Communist ideology aiming to eradicate traditional religious believes and to gain complete control over society[61]. Thus, the former communist countries form a distinctive cluster on the global cultural map as "Communism left a clear imprint on the value systems of those who lived under it" (Inglehart and Baker, 2000, p. 31). Apart from the effect of forced secularization, the influence of the communist heritage on demographic behavior is less clear than the influence of the religious-cultural tradition. Although the former communist countries display a small degree of traditionalism and generally high level of rationalism and secularization, they rank much lower than the other countries on the "self-expression dimension" (Inglehart and Baker, 2000, p. 45). Values like trust, tolerance, subjective well being, political activism and self-expression, which are often associated with profound demographic changes in Western Europe (van de Kaa, 2001) are much less present in the ex-communist countries. The low emphasis put on "postmodern" values may be caused by general feelings of insecure and unpredictable life as well as by the past influence of the repressive authoritarian regime (Inglehart and Baker, 2000, p. 45-46). We may speculate that the widespread feelings of nostalgia and positive attitudes towards the *"ancien régime"* will be a powerful force slowing the disappearance of the *socialist greenhouse* environment and related patterns of reproduction. Especially in the Post-Soviet Republics, previous system of state-organized bureaucratic socialism is enjoying a considerable popularity. There, the social and economic transformation brought about economic and social collapse, which resembles "a caricature of the vicious capitalism the old Communist propagandists warned the masses about" (The Economist, 6.11.1999, p. 24).

In the past, surveys related to values and attitudes have shown that among people living in Eastern Europe, an inconsistent mix of traditional and modern values was strongly rooted. Most respondents agreed with the free access to abortion and approved childbearing among single women. On the other hand, traditional familism was strong there: quite few people considered marriage to be an

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very low fertility in Southern Europe, which displays both higher religiosity and stronger familism than Western and Northern European countries.

[61] Inglehart (1997, p. 38) proposed that Communist ideology "provided a functional equivalent to religion, furnishing an explanation of how the universe functioned and where history was going".

outdated institution, most of them thought that women need to have children to be fulfilled and supported more emphasis on the family life. Recent evidence, provided by the 1999 round of the European Values Study surveys, reveal that the demographic changes over the 1990s occurred simultaneously with the ideational change, characteristic also for the earlier demographic shifts in Western Europe. Lesthaeghe and Surkyn (2002) found a substantial increase in the tolerance toward new living arrangements and procreation outside marriage between 1990 and 1999 in all regions of Central and Eastern Europe. The proportion of respondents who think that women do not need children for their life fulfillment, that marriage is an outdated institution and motherhood among single women is acceptable has increased by 10 to 25 % (ibid., p. 25). Many of these value changes have their roots already in the communist era; nevertheless, their rapid progression over the 1990s clearly marks the complex transformation of reproductive patterns in Central and Eastern Europe. Irrespective of the economic and social situation in particular countries of Eastern Europe, the return back to the era of early and virtually universal childbearing, occurring almost exclusively within marriage, seems impossible.

5. CONCLUSION

What appears at first sight as a uniform decline in fertility rates spreading across Central and Eastern Europe, was in fact a complex transformation of the previous pattern of fertility connected with the collapse of the communist political system. After 1989, within a period of ten years, post-communist countries in Europe have become more differentiated with regard to the social and economic conditions as well as in fertility behavior of their populations. Changes in fertility are part of a broader transition in reproductive and family life marked by the spread of alternative family forms, non-marital births, postponement of childbearing and decline in fertility and marriage rates, which has been taking place in Western European societies since the 1960s. In contrast with Western Europe, changes in Central and Eastern Europe have frequently progressed with a breathtaking speed, partly driven by the emerging economic constraints. The interconnectedness of the changes in values, fertility behavior and family formation, however, clearly points out the influence of the broader social transformation in all post-communist societies.

This paper has outlined two different pathways of fertility change in Eastern Europe over the 1990s. The first may be coined as a rapid transition from the early to the late age at childbearing. The intensive postponement of childbearing went hand in hand with the low first-birth rates, decline in teenage fertility rates, low first-marriage rates and low abortion levels. This pathway is typical of countries, which experienced relatively successful social and economic transformation, and where women may enjoy the advantages offered by the new opportunities, such as prolonged education, more career choice or advanced consumerism. In these societies, particularly in Central Europe, the old model of reproduction marked by early and almost universal transitions to marriage and motherhood has been rapidly loosing ground. Modern contraception, especially the pill, spread quickly and the postponement of first birth was a dominant factor depressing current period fertility rates. The second pathway, characterized by a slow postponement of first births, higher first-birth rates, higher teenage fertility rates, higher abortion rates and low birth rates of the second parity, is more peculiar to countries undergoing deep social and economic crisis, in particular the Post-Soviet republics. The old reproductive regime seems to be more strongly

rooted there. At the same time, traditional cultural-religious division still plays an important role in shaping the fertility change, with more religious and traditional countries undergoing slower transitions and experiencing only a gradual diffusion of alternative family forms.

Currently low fertility rates in Eastern Europe are very likely to remain low in the next two decades. The postponement of first births will proceed further, as the first mothers are on average still fairly young compared with other parts of Europe. Since people are becoming more tolerant to non-traditional forms of behavior and many new opportunities and constraints are competing with the motherhood and family life, the conditions favorable for more differentiated fertility strategies, new family forms, postponement and even giving up the births will probably intensify. The *destandardization* of the life course as well as the "convergence to diversity" – similar trends proceeding with a very different speed in different countries – will continue. Non-discriminative access to employment for women and possibilities to reconcile work with childcare will be among the crucial factors for the future fertility trends. Societies, where the position of women and their access to jobs will deteriorate, and societies, where the pressure for women to follow traditional pathways of life will be strong, are likely to face longer-lasting and more pronounced depression in the birth rates. Gradual economic recovery may paradoxically stimulate further decline in fertility rates and stronger postponement of first births in countries, where fertility decline has been dominantly driven by the factors connected with the economic crisis.

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APPENDIX

Table AP-1: Characteristics of the *socialist greenhouse* environment in various life domains

Education (secondary grammar schools, university education):

-> Limited access, small enrolment (especially universities)

-> Low attractiveness: education only loosely related to job opportunities and to the potential income level

-> Education usually completed at an early stage in life (below age 20), with few opportunities for education later in life

Career

-> Shortage of labour force

-> Full employment

-> Promotion of employment of women

-> Small income differences

-> Limited choice, limited possibilities for the career (based more on political activities than on educational level)

-> Small pressure, low-working intensity environment, no competition for jobs

Social security support and population policy

-> Subsidies for the childcare institutions, various family and child-related benefits, payments and allowances

-> Family and childcare support often pronatalist (money support progressively increasing with the number of children; in some countries (Romania, former USSR) special tax for unmarried persons

-> Generally low costs of chilcare and childrearing

-> Provision of housing linked to the family status and to the number of children

Private life and family life

-> Few opportunities for alternative lifestyles

-> Attractiveness of marriage and family; "escape into the family": family was perceived as a source of privacy, freedom and provided space for self-realization. People could talk freely and trust each other within the family.

-> Establishing a family was often the easiest way for "independent life" out of parental home: housing was provided primarily for families of young couples

-> Official familism

-> Low attractiveness of cohabitation, and voluntary childlessness

-> Relatively traditional gender division of work within family: most childcare provided by women, small repairs and household maintenance by men

-> Limited offer of consumer goods, supply-restricted consumerism

Reproduction

-> Lack of sex education and information regarding sexual life and contraception

-> First sex - usually premarital - mostly occurred without contraceptive use and often led to unplanned pregnancy and subsequent "shotgun marriage"

-> Limited access to modern contraception

-> High reliance on abortions

-> High proportion of unplanned, "mistimed" and "unwanted" conceptions meant that the fertility level was higher than intended

Table AP-2: The effects of the dissolution of the *socialist greenhouse* on various domains of life

Education (secondary grammar schools, university education):

-> Sharp increase in the attractivity of education and in the proportion of young people studying at university

-> Job and career prospects as well as wages linked to educational level

Career

-> Thread of unemployment

-> Increasing income differences by occupation, often by gender

-> Pressure for flexibility, further education and work commitment

-> Prospects for career linked with education, initiative and present work performance

-> Opportunities for private enterpreneurship

-> Disadvantaged position of young women on the labour market: employment opportunities often related to reproductive intentions

Social security support and population policy

-> Decline in the amount of state support for families with children

-> Social benefits and allowances often dependent on income (only the low-income families entitled to certain benefits)

-> Housing mostly available on the market principle

-> No special advantages for "traditional" family

-> Increased price of childcare, both in terms of expenditures and opportunity costs

Private life and family life

-> Alternative lifestyles generally more accepted and tolerated

-> More individualistic lifestyles, new consumer opportunities: "culture of consumption"

-> Broad external "opportunity structure": freedom of expression, freedom to travel, to be engaged in a career or to run own business

-> Family is not anymore a domain for freedom and self-realizatrion

-> "Westernization": media-promoted positive image of "independent women" and non-family lifestyles

-> Economic crisis in some countries paradoxically lead to an increased importance of broader family for the fulfillment of basic needs of its memebers

Reproduction

-> Sex education and modern contraception generally available

-> Explosion of information: sex, contraception and reproductive life are frequently and openly discussed in the media

-> Rapid increase in the use of modern contraception and in the the control over reproduction from the onset of sexual life

-> Decresed reliance on abortions, end of the Eastern European "abortion culture"

Table AP-3: Estimates of the *tempo-effect* in the period fertility changes, 1985-1997/99 (Bongaarts-Feeney adjustment)

	TFR 1985	Avg. TFR 1997-99	Adj.TFR (avg.) 1997-99	TFR decline 1985-98	Decline due *quantum*	Decline due *timing*	Effects: % *quantum*	% *timing*
	(1)	(2)	(3)	(4) = (2) - (1)	(5) = (3) - (1)	(6) = (4) - (5)	(7) = (5) / (4)	(8) = (6) / (4)
Central Europe								
Czech Republic	1.96	1.15	1.67	-0.81	-0.29	-0.52	36.3	63.7
Hungary 1)	1.85	1.35	1.71	-0.50	-0.14	-0.36	28.6	71.4
Poland	2.33	1.44	1.74	-0.89	-0.59	-0.30	66.4	33.6
Slovak Republic	2.25	1.38	1.77	-0.87	-0.49	-0.39	56.0	44.0
Slovenia	1.72	1.23	1.67	-0.49	-0.05	-0.44	11.2	88.8
South-Eastern Europe								
Bulgaria	1.95	1.14	1.38	-0.81	-0.57	-0.24	70.5	29.5
Romania	2.32	1.31	1.51	-1.01	-0.81	-0.20	80.1	19.9
Baltic states								
Estonia	2.12	1.24	1.61	-0.88	-0.51	-0.37	58.0	42.0
Latvia	2.09	1.13	1.56	-0.96	-0.53	-0.43	55.4	44.6
Lithuania	2.09	1.37	1.63	-0.72	-0.45	-0.26	63.2	36.8
Post-Soviet republics								
Russia 2)	2.11	1.35	1.47	-0.76	-0.64	-0.12	83.9	16.1

Notes:

1) Recent figures refer to the 1997-98 period

2) Recent figures refer to 1995 only

AdjTFR — Bongaarts-Feeney (1998) adjusted TFR based on changes in the mean age of mothers by parity

Decline due quantum — Estimated TFR decline attributed to the decline in fertility level

Decline due timing — Estimated TFR decline attributed to changes in fertility timing (postponement of births)

Data sources: Council of Europe (2000), EUROSTAT (2001, 2002), CSU (2000b), GUS (1998-99), Steshenko (2000)

Table AP-4: Selected indicators of economic development, technology and institutional quality

	GDP PPP 1998 ($)	Real GDP 1989-99	HDI 1998	HDI 1990-98	Inflation 1990-99 (%)	% food 1998	Change in e0 M	Modern technology	Institution index
Central Europe									
Croatia	6698	77.9	0.795	0.009	290.8	40.0	1.8	..	0.3
Czech Republic	12197	95.3	0.843	0.013	15.3	26.8	3.0	81.5	6.8
Hungary	9832	99.4	0.817	0.019	21.4	42.1	0.9	89.1	8.7
Poland	7543	121.8	0.814	0.029	66.9	36.9	2.0	37.7	7.0
Slovak Republic	9624	101.7	0.825	0.013	11.9	31.8	1.6	56.4	2.8
Slovenia	14400	105.3	0.861	0.021	98.5	26 (1997)	2.0	87.4	8.5
Former GDR	..	98.5 (1998)	..	..	..	..	2.2 (89-97)	..	
South-Eastern Europe									
Bulgaria	4683	70.7	0.772	-0.010	160.0	53.5	-0.7	11.3	0.1
Romania	5572	75.8	0.770	-0.001	110.2	58.0	-0.3	17.4	-0.8
Baltic states									
Estonia	7563	78.3	0.801	-0.005	124.1	37.5	0.0	150.3	6.1
Latvia	5777	59.6	0.771	-0.026	131.1	44.9	-1.3	50.6	2.6
Lithuania	6283	64.2	0.789	-0.020	162.3	46.0	-1.2	47.9	2.6
Post-Soviet republics									
Belarus	6314	81.4	0.781	-0.023	535.8	..	-4.1	0.9	-7.6
Moldova	1995	31.3	0.700	-0.057	261.8	..	-1.3	1.0	-2.0
Russia	6180	57.6	0.771	-0.041	315.9	57.5	-2.9	7.0	-5.4
Ukraine	3130	39.3	0.744	-0.049	670.2	..	-2.9	2.5	-5.8

GDP PPP 1998 ($)	GDP per capita in purchasing power parity in 1998, US Dollars
Real GDP 1989-99	Index of real GDP in 1999, 1989=100
HDI 1998	Human Development Index 1998
HDI 1990-98	Absolute change in Human Development Index 1990-98
Inflation 1990-99 (%)	Average inflation rate 1990-99 (arithmetic average)
% food 1998	Household expenditures on food, alcohol and tobacco 1998 (% of all expenditures)
Change in e0 M	Change in the life expectancy of men at birth in 1989-1998
Modern technology	Index combining number of mobile phones per 1000 inhabitants and Internet connections per 10000 inhabitants in 1999 (both indicators divided by 2)
Institution index	Index based on the following components: extent of democracy, government effectiveness, extent of regulation, rule of law and extent of corruption

Sources: UN HDR (2000), UN ECE (2000(2), 2001), Council of Europe (2000, 2001), FV (2000), EUROSTAT (2001, 2002), Zohhori et al. (1999)

Table AP-5: Selected indicators of employment, unemployment and labor force

	F labour force (% in 1998)	Registered unem.(%, 99)	Survey unem. % (LFS 98)	F unem. % (LFS '98)	F/M unem. LFS (index 98)	Youth unem. % (LFS 98)	% LF agric. (98)	% LF indust. (98)	Gender pay ratio (96)
Central Europe									
Croatia	..	20.8	11.6	12.8	1.10	30.9	16.5	29.6	..
Czech Republic	43.8	9.4	6.5	8.2	1.26	12.4	5.5	41.0	81.3
Hungary	44.8	9.6	7.8	7.0	0.90	13.5	7.5	34.2	78.1 (97)
Poland	44.9	12.8	10.6	12.3	1.16	23.2	25.2	29.5	79.0
Slovak Republic	44.9	18.2	16.1 (99)	13.2	1.06	23.6	7.7	35.5	78.2
Slovenia	45.9	12.8	7.9	8.0	1.01	18.3	6.7	41.6	85.4
Former GDR	..	17.6	..	..	..	..	..	..	..
South-Eastern Europe									
Bulgaria	..	17.0	16.0	15.9	0.99	36.0	26.2	30.6	69.1 (97)
Romania	45.7	11.3	6.9 (99)	6.1	0.97	18.3	38.1	30.7	76.2 (97)
Baltic states	..								
Estonia	48.4	6.6	12.3 (99)	8.9	0.90	15.7	9.1	33.2	72.6
Latvia	47.1	13.8	13.8	14.1	1.02	25.5	17.6	24.4	79.9 (98)
Lithuania	48.4	13.3	13.3	12.2	0.92	22.2	21.4	27.1	71.0 (97)
Post-Soviet republics									
Belarus	..	2.3 (98)	..	..	..		16.4	35.1	..
Moldova	..	1.9 (98)	14	..	..		45.8 (95)	..	..
Russia	..	2.2	12.6 (99)	11.3	0.93		14.1	30.1	69.5
Ukraine	..	11.3	11.3	..	..		22.4	26.7	77.7

Notes:

F labour force (% in 1998)	Female labor force as % of labor force (data from the Labor Force Surveys (LFS))
Registered unem. (%, 99)	Officially registered unemployment rate in 1999, %
Survey unem. % (LFS 98)	Unemployment rate in 1998 based on the LFS surveys, %
F unem. % (LFS '98)	Female unemployment rate in 1998 based on the LFS survey
F/M unemployment LFS (index '98)	Index of female / male unemployment rate (LFS, 1998)
Youth unem. % (LFS 98)	Youth (age 15-24) unemployment rate in 1998 (LFS surveys)
% LF agric. (98)	Proportion of labor force employed in agriculture, forestry and fishing (1998, LFS)
% LF industr. (98)	Proportion of labor force employed in industry and construction (1998, LFS)
Gender pay ratio (96)	Female monthly wages as a percentage of male monhly wages in 1996

Sources: UN ECE (2000 (2)), EUROSTAT (2001), FV (2000), TransMONEE 2000, UNICEF (1999)

Table AP-6: Education: Proportion of young people in education, %

	Total 1998 15-19	Total 1998 20-24	M 1998 20-24	F 1998 20-24	index F/M 20-24	Tertiary 1990	Tertiary 1998	Abs. change 1990-98
Central Europe								
Croatia	..	..	..	..	..	14.1 ('91)	17.8	3.7
Czech Republic	77.1	19.2	19.7	18.6	0.94	13.9	16.9	3.0
Hungary	77.5	21.9	20.1	23.7	1.17	12.2	27.4	15.2
Poland	81.0	31.3	29.5	33.3	1.13	13.5	34.2	20.7
Slovak Republic	..	..	..	..	..	14.0	19.6	5.6
Slovenia	80.5	27.8	23.3	32.6	1.40	13.1	29.1	16.0
Former GDR	..	..	..	..	..	..	..	..
South-Eastern Europe								
Bulgaria	61.4	24.0	19.3	28.8	1.49	21.7	32.4	10.7
Romania	56.4	16.0	15.3	16.8	1.10	8.1	17.3	9.2
Baltic states								
Estonia	76.0	24.9	22.1	28.0	1.27	20.1	32.9	12.8
Latvia	73.0	24.2	19.8	28.6	1.45	20.6	42.0	21.4
Lithuania	74.7	21.1	17.0	25.4	1.50	20.1	23.7	3.6
Post-Soviet republics								
Belarus	..	..	..	..	..	22.9	27.7	4.8
Moldova	..	..	..	..	..	15.8	20.1	4.3
Russia	..	..	..	..	..	24.5	28.2	3.7
Ukraine	..	..	..	..	..	21.9	27.9	6.0

Sources: calculated from the EUROSTAT (2001, 2002) data and TransMONEE 2000 database (tertiary education)

Notes:

Tertiary Tertiary gross enrollment rate: Proportion of young people aged 19-24 in tertiary education

Table AP-7: Parity-specific indicators of period fertility in Central and Eastern Europe in 1980-1999
a) Total fertility rate of parity 1

	1980	1985	1990	1994	1995	1996	1997	1998	1999
Central-Eastern Europe									
Czech Republic	0.94	0.92	0.90	0.64	0.56	0.52	0.53	0.53	0.53
Hungary	0.91	0.87	0.82	0.68	0.65	0.62	0.59	0.57	0.56
Poland	0.90	0.92	0.85	0.70	0.65	0.65	0.64	0.62	0.60
Slovak Republic	0.92	0.93	0.88	0.70	0.63	0.60	0.59	0.58	0.57
Slovenia	1.02	0.87	0.71	0.63	0.61	0.61	0.60	0.60	0.60
Former GDR	0.94	0.90	0.89 ('89)	..	..	..	..	..	..
South-Eastern Europe									
Bulgaria 1/	0.97	0.91	0.90	0.73	0.66	0.66	0.63	0.65	0.69
Romania	0.96	0.85	0.75	0.74	0.70	0.68	0.69	0.68	0.67
Baltic states									
Estonia	..	..	..	..	0.66	0.66	0.61	0.60	0.63
Latvia	..	..	..	..	..	..	0.58	0.56	0.59
Lithuania	0.94	0.98	0.99	0.78	0.76	0.71	0.68	0.65	0.64
Post-soviet republics									
Moldova	..	..	1.08	..	..	0.77	..	..	..
Russia 2/	..	..	0.99	0.85	0.83	0.79	..	0.72	..
Ukraine	..	..	0.99 ('89)	0.84	..	..	..	..	..

Table AP-7 b): Total fertility rate of parity 2

	1980	1985	1990	1994	1995	1996	1997	1998	1999
Central-Eastern Europe									
Czech Republic	0.81	0.74	0.71	0.55	0.51	0.47	0.46	0.45	0.43
Hungary	0.71	0.68	0.68	0.57	0.55	0.50	0.46	0.44	0.42
Poland	0.76	0.80	0.67	0.56	0.51	0.50	0.48	0.45	0.43
Slovak Republic	0.80	0.79	0.74	0.57	0.52	0.49	0.48	0.46	0.44
Slovenia	0.81	0.67	0.57	0.52	0.51	0.50	0.47	0.46	0.44
Former GDR	0.69	0.63	0.60 ('89)	..	..	..	..	..	..
South-Eastern Europe									
Bulgaria 1/	0.79	0.77	0.68	0.47	0.42	0.42	0.34	0.35	0.39
Romania 2/	0.74	0.73	0.54	0.38	0.37	0.37	0.38	0.38	0.38
Baltic states									
Estonia	..	..	..	..	0.42	0.40	0.40	0.38	0.42
Latvia	..	..	..	..	..	..	0.34	0.34	0.37
Lithuania	0.70	0.75	0.72	0.52	0.51	0.49	0.48	0.48	0.47
Post-soviet republics									
Moldova	..	..	0.80	..	..	0.54	..	..	..
Russia 3/	..	..	0.64	0.38	0.37	0.35	..	0.37	..
Ukraine	..	..	0.70 ('89)	0.45	..	..	..	..	..

Table AP-7 c): Total fertility rate of parity 3 and higher

	1980	1985	1990	1994	1995	1996	1997	1998	1999
Central-Eastern Europe									
Czech Republic	0.35	0.30	0.28	0.24	0.21	0.19	0.19	0.18	0.18
Hungary	0.29	0.30	0.36	0.40	0.37	0.34	0.33	0.31	0.30
Poland	0.59	0.61	0.54	0.54	0.46	0.44	0.40	0.36	0.33
Slovak Republic	0.60	0.54	0.47	0.40	0.37	0.37	0.36	0.34	0.32
Slovenia	0.28	0.23	0.18	0.17	0.18	0.18	0.18	0.17	0.17
Former GDR	0.25	0.25	0.19 ('89)	..	..	..	..	..	..
South-Eastern Europe									
Bulgaria 1/	0.29	0.27	0.24	0.17	0.15	0.15	0.13	0.12	0.15
Romania 2/	0.75	0.68	0.54	0.28	0.26	0.25	0.25	0.25	0.25
Baltic states									
Estonia	..	..	..	..	0.23	0.24	0.22	0.22	0.23
Latvia	..	..	..	..	..	..	0.19	0.19	0.21
Lithuania	0.35	0.35	0.32	0.23	0.22	0.21	0.22	0.23	0.24
Post-soviet republics									
Moldova	..	..	0.51	..	..	0.30	..	..	..
Russia 3/	..	..	0.28	0.14	0.14	0.13	..	0.14	..
Ukraine	..	..	0.24 ('89)	0.17	..	..	..	..	..

Table AP-7 d): Mean age of women at birth of first child; based on the distribution of fertility schedule (reduced rates)

	1980	1985	1990	1994	1995	1996	1997	1998	1999
Central Europe									
Croatia	22.8	23.3	23.8	24.8	25.0	25.0	25.2	25.4	25.4
Czech Republic	22.37	22.35	22.47	22.92	23.32	23.68	24.04	24.35	24.59
Hungary	22.45	22.80	23.10	23.59	23.81	24.07	24.26	24.53	24.84
Poland	23.4	23.8	23.31	23.64	23.75	23.87	24.03	24.15	24.33
Slovak Republic	22.69	22.62	22.65	22.82	23.00	23.17	23.38	23.59	23.82
Slovenia	22.83	23.10	23.72	24.63	24.93	25.20	25.52	25.83	26.13
Former GDR	23.5	24.1	24.5	..	..	..	..	..	..
South-Eastern Europe									
Bulgaria	21.9	21.9	22.0	22.17	22.38	22.54	22.78	22.91	22.98
Romania	22.43	22.60	22.59	22.77	22.97	23.14	23.27	23.43	23.52
Baltic states									
Estonia	23.2	23.2	22.9	22.8	23.04	23.19	23.42	23.63	23.80
Latvia	22.9	23.0	23.04	23.28	23.33	23.47	23.83	24.00	24.18
Lithuania	23.79	23.53	23.24	23.02	23.16	23.20	23.40	23.60	23.77
Post-Soviet republics									
Belarus	..	..	22.61	22.36	22.41	22.50	22.47	22.62	..
Moldova	..	..	22.28	..	..	22.19	..	..	..
Russia	22.99	22.91	22.72	22.37	22.47	22.64	..	23.16	..
Ukraine	..	..	..	..	..	..	..	..	..

Data sources: EUROSTAT (2001, 2002), Council of Europe (2000, 2001), CNPS (1990-1995), CSU (2000b), GUS (1991-94), HCSO (1981-1995), Steshenko (2000), CNPS (1998), DASS (1999), Philipov and Kohler (1999), FSU (1981-89 (1) and (2)), Boleslawski (1993), Zeman (1998), Barkalov and Dorbritz (1996), Sircelj (2000) and unpublished data

Notes:

1/ Data for 1980-1990 computed from rates by 5-year age groups

2/ Data for 1980 and 1985 computed from rates by 5-year age groups

3/ Data for 1998 computed from rates by 5-year age groups